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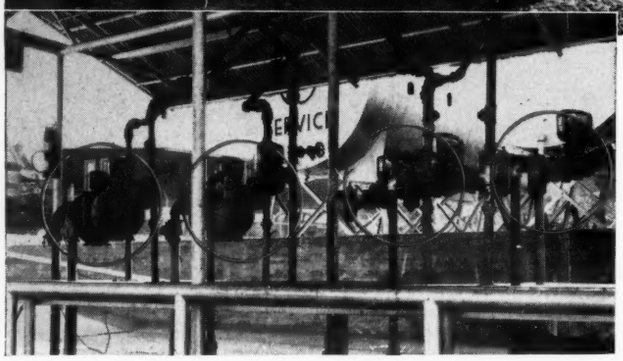

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Truck tank loading and Continuous Bulk Inventory Control in large and small plants can be accurately, efficiently and constantly controlled through the use of Brodie Meters and a simplified stock record system for each fill pipe. In addition to providing an automatic method of gallonage checking between each withdrawal, Brodie Meters permit a quick audit at the end of each day to double check all stock movements. Through this method any errors or discrepancies are immediately brought to light, rather than being allowed to accumulate into unaccountable losses. Install Brodie Meters as full time auditors on your loading racks, today. Write for full details.

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fueloil & oil heat

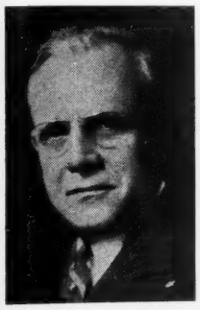
VOL. 7, NO. 1

MAY

1948

Names in the News

Ray G. Whipple, treasurer and general manager, Harvey-Whipple, Inc., Springfield, Mass., has been elected president of the company, succeeding *Walter O. Harvey,* who becomes chairman of the board. *T. A. Hodgdon,* director of marketing, has assumed also the duties of vice president and *Leonard F. Connor,* assistant treasurer, becomes treasurer, succeeding Mr. Whipple.



William A. Boone has been appointed assistant sales manager, Bell & Gossett Co., Morton Grove, Ill., according to R. E. Moore, vice president. Mr. Boone will make his headquarters at the company's home office. Since 1940 he has been with B & G's industrial division, which manufactures and distributes heat transfer equipment, centrifugal pumps, quench oil coolers and refrigeration components.

Walter H. Kelly has been named district manager, Heating and Appliance Div., Evans Products Co., Plymouth, Mich., in the territory including Philadelphia, Washington, D. C., Maryland, Delaware and Virginia. He will maintain offices in Drexel Hill, Philadelphia. Prior to joining Evans, Mr. Kelly was district sales manager for Proctor Electric Co. and Brunswick-Balke-Collender Co. He will be concerned with the sale in his area of

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FRONT COVER: A timely reminder to concentrate on tuning and adjusting services to achieve maximum efficiency for every installation.

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Pacific Coast Representative: Don Harway
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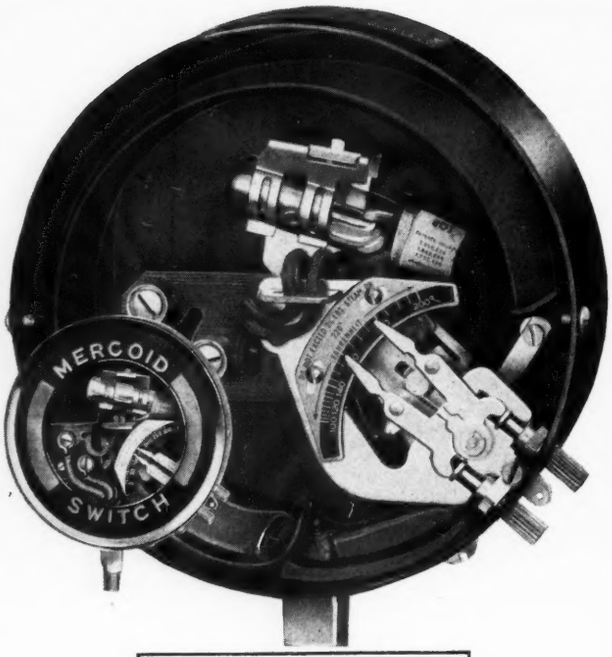
TEMPERATURE & PRESSURE CONTROLS DESIGNED FOR THE JOB



DA Temperature Control
WITHOUT COVER

NOTE THE FEATURES

MERCURY SWITCH

Hermetically sealed mercury switch is used. They cannot be affected by dust, dirt or corrosion; nor are they subject to open arcing, oxidation, pitting or sticking of contacts, all common causes of contact trouble. This switch will give better control service and longer control life.

BOURDON TUBE
(Hidden back of cover)

The Bourdon tube is the actuating element of the control. It is the oldest known, tried and proven element, having been used in gauges for many years.

OUTSIDE ADJUSTMENT

The outside double adjustment with the calibrated dial and pointers is a convenient feature, making it very easy to set the required operating range, plainly visible on the dial. All guesswork is eliminated.

GLASS FACE

The glass face on the cover permits seeing the entire operation of the control in plain view. One can always tell whether the switch circuit is open or closed, a great convenience whenever servicing becomes necessary.

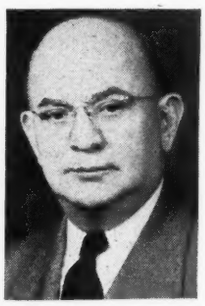
WRITE FOR CATALOG

THE MERCOID CORPORATION
4201 Belmont Avenue * Chicago, Illinois

Evan's complete line of oilburning home heating equipment.

David C. Doster has joined his father, Alexis Doster, in his business as manufacturers' representative in the New England territory. David Doster spent four years with the Royal Air Force and a year with the Army Air Force during the war. Mr. Doster was general manager for Torrington Mfg. Co., prior to starting his own business two years ago.

Harold B. Smith, eastern district sales manager, L. J. Mueller Co., Milwaukee, Wis., is covering the New England and Middle Atlantic States, Maryland, Delaware, District of Columbia, Virginia, West Virginia and southeastern Ohio. Before joining Mueller, Mr. Smith for twelve years, beginning 1934, was New England manager for Lennox Furnace Co. During 1946 and 1947 he served with Allied Heating and Air Conditioning Co., Boston, Mass.



John C. Barnes is the newly-appointed vice president for sales, National Radiator Co., Johnstown, Pa. He formerly was sales manager of the Washington and Philadelphia branch offices and has been with National since 1940. Prior to that he was with Montgomery Ward and Co. in the engineering department and assistant sales manager of its Baltimore branch. Part of a sales activities rogram revealed by Mr. Barnes calls for close coordination between sales and advertising efforts.

Rolland D. Koenitzer, as newly appointed assistant chief engineer, Heat Transfer Dept., Brown Fintube Co., Elyria, Ohio, will concentrate his efforts on fueloil heaters and tank heaters, lube oil coolers, compressed gas heaters and coolers. Mr. Koenitzer has had considerable experience as sales engineer, experimental and chief engineer for various concerns, most recently with McCord Corp., Detroit.

Did your customer write *this* letter?

A few weeks ago we received this letter from a homeowner who had seen an advertisement about a small motor which, under laboratory conditions, had operated about nine years before needing repairs.

The letter is well worth your reading. It suggests how you can assure *complete customer satisfaction.*

March 1st 1948

The Ohio Electric Mfg. Co.
Cleveland, Ohio

Gentlemen:

Your attention is invited to the enclosed advertisement. Now here is another one -- after nineteen (19) years of use in an automatic oil burner.

I have an Ohio 1/12 HP motor, Serial No. T-439, Cy. 60, Volt. 110, Type A-1, T-20 AC, that was installed therein, with the only service it ever had was a shot of three & one oil once in a while.

It would still be in use today, except for unforeseen circumstances. The hot water boiler cracked and flooded the basement and I had to install an emergency gas heater.

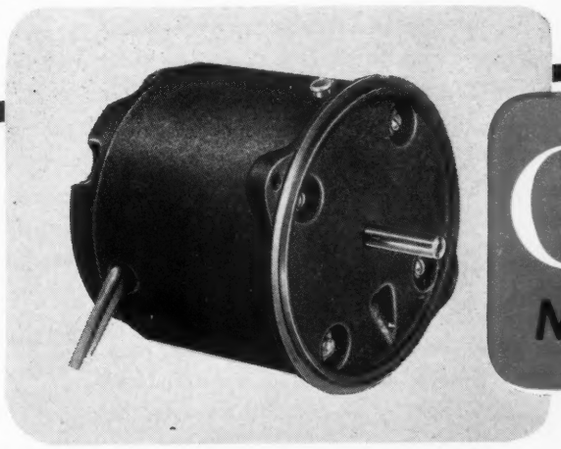
The motor and assembly was dismantled and I expect to install it in another house. An electrician examined the motor and informed me that no repairs of any kind are required and that it is good for another 19 years.

So it is apparent that when better motors are built the Ohio Electric Mfg. Co. will make them. I don't know how many times the motor has turned over but it's ready to start over again without any first aid. It seems it was built to last.

Very truly yours,

Irving E. Tier

1531 Spring Place N. W.
Washington 10, D. C.



Replace wartime substitute motors with proved Ohio power. Specify Ohio Motors on all new burners you install today.

Ohio MOTORS

the motor customers write about—*enthusiastically*

THE OHIO ELECTRIC MFG. CO.

5913 Maurice Avenue • Cleveland 4, Ohio

fueloil & oil heat

Editorial Leaks

Elsewhere in this issue there is a summary of a public opinion survey conducted for this magazine by a nationally recognized firm, noted for the accuracy of its results. There is a close correlation between results from this survey and the study made for the Oil Industry Information Committee wherever similar questions were asked. The FUELOIL & OIL HEAT survey, however, digs a little deeper into the public's preferences, and comes up with some answers that should give oil industry management food for serious thought.

It is doubtful if the top brass in the petroleum business ever before has had a view of what the public thinks of their products, and how it wants them used. There is plenty of evidence from the industry that gasoline is its pet product, but the public has other ideas of the most essential products from the barrel of crude. The various subdivisions of Question 10 should prove an education to many.

More than four people out of five believe there should be a priority among users when there is a scarcity of "gasoline and oil." Liberally interpreted, they do not favor conventional refinery yields in time of shortage. They want the barrel divided to satisfy specific demands they believe are most essential. And who should get the first slice out of the barrel?

Nearly two thirds of the people who think there should be preference also think "homes and apartments" should be supplied first. Homes and apartments use very little gasoline. Electric utilities are next in favor, and farm equipment comes third. Only 3% favored passenger automobiles, the favored customer of the petroleum business.

It is interesting to note that when the question was asked in reverse—which users were least essential—the percentages were also reversed. Then passenger automobiles were 63% and homes and apartments got 3%. Such a check on the first answers indicates that people are definite in their preferences.

With more than half of all the people interviewed showing a belief that homes and apartments are the first obligation of the oil industry, some change in the thinking of prominent oil company officials could be made with profit to the public and to the companies themselves. Such a lack of comprehension of public feeling on the part of management may account for the relatively low rating the oil industry gets among basic industries in public surveys. A change in attitude is long overdue.

◈

About six years ago manufacturers and dealers were busily engaged in finding a government agency to buy the stock of domestic oilburners and parts they had on hand. It seemed smart to get liquid, and fast. As it seemed then, there would be no chance to sell an oilburner for a long time, so badly needed money might be tied up for months or even years. Few had the foresight to see that with manufacturing stopped, and a steady replacement demand, oilburners would be commanding a premium within a few months. Controls and burner parts were equally in demand and service organizations were scrambling to buy up any available stocks at any price.

Many oilheating men see a parallel between conditions today and those of six years ago. Stocks of burners and parts are piling up in some areas, due to inability to convince people that an oil supply will be available for a reasonable increase in demand. A slowdown in replacement demand, for the same reason, has aggravated the present situation, and frightened some manufacturers and distributors into a price attitude that is causing concern. The rush to get liquid seems to be getting under way.

A new "Defense Program" is getting started meanwhile, and there are those who are willing to bet that burner parts, accessories and installation materials will be as tight by the end of this year as they were at the end of 1946. Cast iron, steel sheet and plate, copper wire and even aluminum sheets are frequently mentioned as the items that are getting increasingly short, and may get snorter. Many raw materials already are hard to find, and buyers are getting little encouragement for the immediate future. Some banks are reported to be offering attractive terms to finance purchases of basic materials, which also is being cited as a straw in the wind.

Economic forecasting is a hazardous occupation at best, and anyone who makes predictions on the dark side for the oilheating business at present should be sure his life insurance contracts are in good order. Further, it is contended in some quarters that our crystal ball is somewhat out of round these days, so we hasten to assure one-and-all the observations above are not predictions. They are tossed on the table for such use as they may be to those who want to make up their own minds.

◈

A sage, whose name escapes us, has defined public relations as "the art of convincing people they like you—whether there are any grounds for it or not." If there are no objections, the definition will stand as quoted.

To most of us, who lay no claim to a profound understanding of public relations, it seems that the job being done by some of the major oil companies' departments would be easier and more effective if they would try to find the reasons for liking the companies, rather than demanding unpopular action from the public—or else.

It becomes a little mystifying to the uninitiated to see high-powered public relations talent fighting a desperate rear guard action instead of leading a spirited attack for a favorable impression in the public mind.

We suggest that the definition be pasted over the desks of some of our contemporaries who seem to have gotten off the track.

◈

In case there is some doubt as to where the money has come from to buy all the commodities in recent years: In 8 years wages have doubled, but prices have risen only 2/3 as much.

ASK YOURSELF THIS QUESTION:

s 100% return on your investment each year ENOUGH?

The equipment of an old tank with VENTALARM® Signal returns the cost of the device plus installation in the first year.

The cost of equipping a new tank with VENTALARM® Signal is repaid in the first six deliveries — or by eliminating two non-delivery stops. The delivery savings will be twice the cost of the VENTALARM® Signal every year for years to come.

That's 200% return!

TYPE LC
for tanks
already installed

No VENTALARM® Signal has ever worn out . . . and there are over a million in use making profits and friends for thousands of oil companies.

Available through your jobber

MORE THAN 50% of all fuel oil companies in the United States use VENTALARM® Signal to create profits.

SCULLY SIGNAL COMPANY

88 First Street Cambridge 41, Mass.

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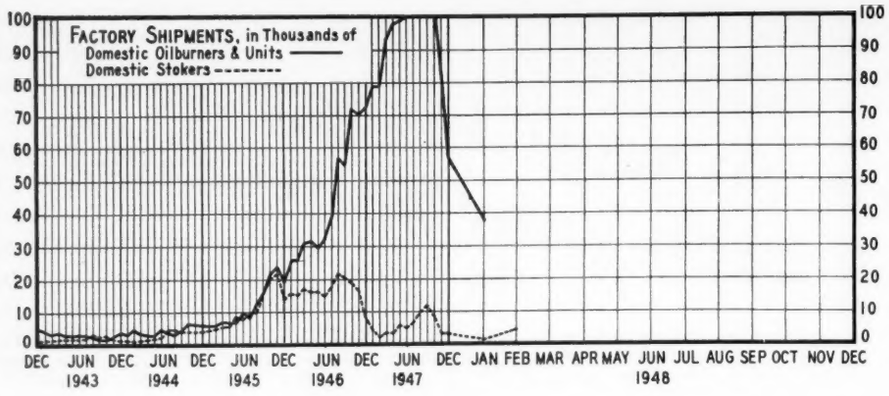
VENTALARM
"Whistling" FUEL TANK SIGNAL

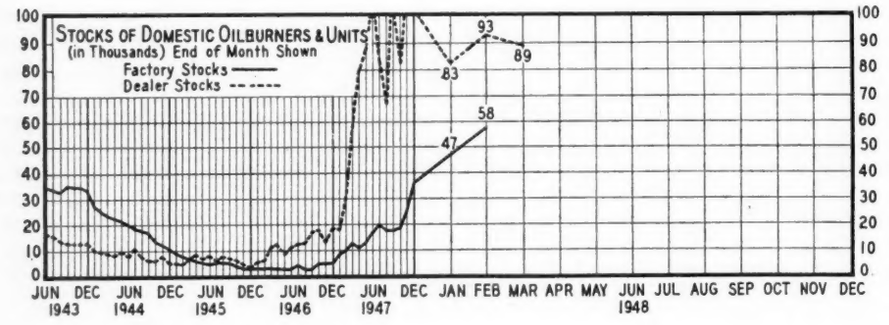

FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947 1948

Shipments of Oilburners and Units

(Including Exports)

Adjusted to include manufacturers other than the 162 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	FEBRUARY			TWO MONTHS		
	1948	*1947*	*Percent Change*	*1948*	*1947*	*Percent Change*
Conversion	16,285	64,167	— 74.6	41,570	131,084	— 68.3
Boiler units	1,791	3,053	— 41.3	4,325	6,855	— 36.9
Furnace units	4,869	12,305	— 60.4	15,172	21,797	— 30.4
All domestic	22,945	79,525	— 71.2	61,067	159,736	— 61.8
Commercial	2,572	4,627	— 44.4	5,357	9,329	— 42.6
Total	25,517	84,152	— 69.7	66,424	169,065	— 60.7

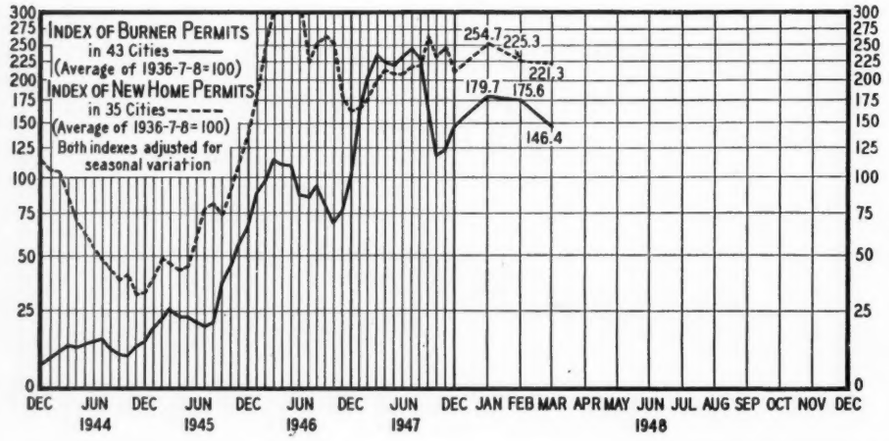

STOCKS OF DOMESTIC OILBURNERS & UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
93
89
83
58
47
JUN DEC JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1943 1944 1945 1946 1947 1948

March Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS	BOILER-BURNERS	FURNACE-BURNERS
Highest	$449	$1010	$1100
Lowest	245	325	370
Mar. Aver.	351	703	620
Feb. Aver.	352	710	619

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
March	150.6	Six months ago	140.1	March	149.4	Six months ago	144.2
February	145.0	Year ago	158.6	February	149.6	Year ago	143.3



Oilheating Trends

ESTIMATED INSTALLATIONS of domestic oilburners and units in March were 16,167, or considerably less than half of the 37,044 installed during the same month of 1947. Total installations for the first three months of this year were 77,444, compared with 143,553 in the first quarter of last year, a decline of 46%. The installations this year, however, were only slightly below 1946's 79,135. March installations were divided: Replacements 7,518; New Homes 3,621; and Conversions from other fuels 5,028. For the full quarter, replacements were 35,320, or 46% of total installations; new homes accounted for 20,478, or 26%; while conversions from other fuels numbered 21,646, or 28%.

The decline of the monthly rate of replacement sales is disappointing. In January there had been 15,660, in February 12,142, and in March, as previously mentioned, 7,518. This indicates as the heating season advanced less folks were inclined to attempt to get fuel savings by this route. Aggressive selling campaigns during this year are expected to bring replacement sales up to about 150,000.

BURNER STOCKS: Stocks of domestic oilburners and units in dealer hands on March 31 are estimated to have been 89,247. This compares with 92,625 a month earlier. Factory stocks on February 29, the latest available data were 57,696, continuing their uptrend.

FUELOIL PROBLEMS: Only 1,317 homes in the country were out of oil at any time during March. This compares with 48,688 in February, indicating that supply troubles had almost vanished when March arrived. It had been generally recognized that this would be the case because of the large number of tankers being made available to the East Coast in late February. Total runouts for the heating season through March 31 were approximately 180,000, or 5% of all oil customers. When it is recognized that the average of these homes was out of oil for only a few hours, or a few days at most, it can be seen that the real fueloil shortage, as measured by cold burners, was only a small fraction of one percent of the total amount needed.

As a result of this winter's problems most fueloil distributors plan to fill their storage just as rapidly as they can this Spring, and will try to keep it that way. Among all companies reporting on that question, 81% plan to maximize their bulk storage. The variation on this by areas runs from a low of 75% in New England to a high of 87% in the Midwest.

Supply limits for next heating season have been given to only 19% of the reporting fueloil distributors. The other 81% have not been placed under limitation. The 19% that have been limited are divided into two groups, 14% that are told they can have no more than last year, and 5% that have been given stated increases.

SELLING TANKS: Since the first of the year, oilburner and fueloil companies have sold approximately 15,223 customer storage tanks to increase the capacity at existing installations. This was calculated through March 31. The most popular activity in this connection was the addition of another 275 gallon tank, since this could be done in many instances for as little as $75, including installation. It is interesting to notice in the table that one-thousand gallon tanks were more than twice as popular as the 550 size, and that the 3,000 gallon variety was bought by more people than the 2,000. This activity could provide dealers such more needed profits this year, if we don't run into a steel problem.

Size Characteristics of Tanks Sold

Size	Number
275 gal.	10,046
550	1,440
1,000	3,216
1,500	245
2,000	92
3,000	123
5,000	61

SWITCH TO COAL: Approximately 2,573 former oilburner users switched over during the winter from oil to coal as a fuel. This sounds like an impressive lot, but it is actually considerably less than one-tenth of one percent, and is thus negligible. Approximately 276 users of No. 5 or 6 oil switched to coal during the winter, and again this movement is too slight to be noticed. In an attempt to learn if there was anything particularly different about folks who went back to coal, the dealers were asked how large had been the average such account in terms of normal gallons per season. Putting together all of the answers on this, it now seems that there was nothing particularly unusual about such customers . . . they burned an average of 1,728 gallons.

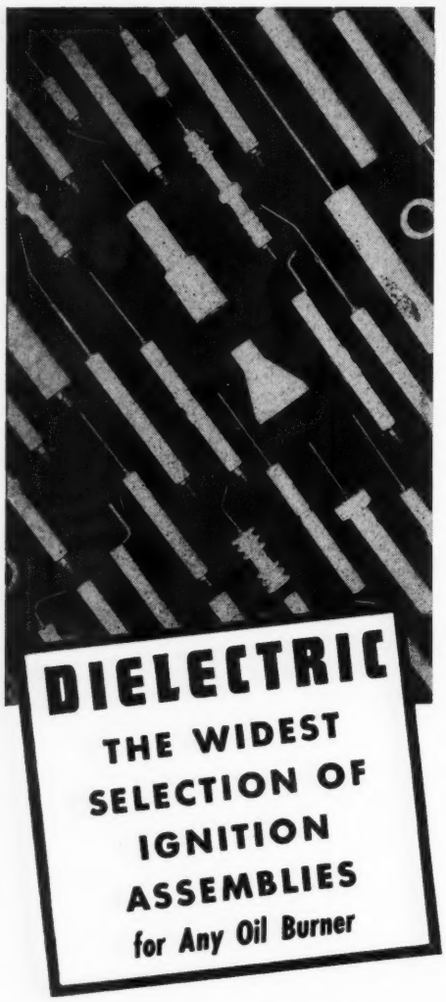
DEALER OUTLOOK: At the end of the first quarter oilheating dealers were looking about to take stock of their situation, and make necessary adjustments in their organizations. Among all reporting dealers, the outlook, as of now, for 1948 oilburner installations indicates a drop of 42% from their 1947 levels. In other words, that is their composite vote on the outlook. It was interesting to notice that this percentage was not uniform throughout the country. New England dealers expect a drop of only 29%, Mid-Atlantic dealers think their burner sales will be down 43%, while in the Midwest, sales are expected to be

(*Continued on page 141*)

Oilburner* and Building Permits

OILBURNERS March 1948	OILBURNERS March 1947	OILBURNERS 3 MONTHS 1948	OILBURNERS 3 MONTHS 1947		DWELLINGS March 1948	DWELLINGS March 1947	DWELLINGS 3 MONTHS 1948	DWELLINGS 3 MONTHS 1947
26	1338	372	1768	Baltimore, Md.	268	166	655	412
..	..	..	..	Binghamton, N. Y.	3	7	6	11
..	..	..	..	Boston, Mass.	11	27	59	47
33	79	183	275	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, N. Y.	14	15	52	26
..	..	..	..	Des Moines, Ia.	95	82	163	129
493	492	..	1167	Detroit, Mich.	913	1031	1950	1974
38	30	178	67	Elizabeth, N. J.	0	1	0	2
15	22	33	78	Freeport, N. Y.	..	..	..	..
..	..	..	..	Greenwich, Conn.	26	26	39	40
..	..	..	..	Hackensack, N. J.	2	3	9	6
102	200	234	508	Hartford, Conn.	..	..	..	..
6	31	10	68	Irvington, N. J.	2	4	4	7
..	..	..	..	Lynn, Mass.	11	6	16	16
7	23	82	71	Meriden, Conn.	..	..	..	..
84	135	358	413	Milwaukee, Wisc.	155	124	268	163
71	137	335	371	Minneapolis, Minn.	82	41	172	106
13	..	37	..	Montclair, N. J.	..	..	..	..
11	20	28	64	Mt. Vernon, N. Y.	..	..	..	..
51	..	84	..	Newark, N. J.	..	..	..	..
60	44	184	198	New Bedford, Mass.	..	..	..	..
19	24	57	158	New Haven, Conn.	..	..	..	..
..	0	..	0	New Orleans, La.	..	..	..	..
..	22	..	69	New Rochelle, N. Y.	5	5	13	14
..	4650	..	13,049	New York City (total)	..	..	..	..
..	3790	..	10,797	Brooklyn-Queens	..	..	..	..
341	860	1071	2252	Manhattan, Bronx, Rchd	..	..	..	..
96	86	268	269	Norfolk, Va.	56	33	124	83
3	0	3	7	Oakland, Calif.	..	71	..	111
97	87	372	234	Omaha, Neb.	65	..	..	..
11	11	23	26	Orange, N. J.	2	1	2	1
14	41	37	..	Passaic, N. J.	..	..	..	..
20	62	40	120	Paterson, N. J.	6	2	19	3
364	587	885	1716	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	8	21	11	40
8	66	46	216	Portland, Maine	27	7	27	7
..	735	..	1587	Portland, Ore.	174	196	448	408
6	15	39	57	Poughkeepsie, N. Y.	..	16	..	23
29	81	101	296	Providence, R. I.	19	..	21	..
..	..	..	..	Reading, Pa.	4	3	5	4
21	29	206	99	Richmond, Va.	229	48	363	136
118	107	238	316	Rochester, N. Y.	..	..	..	..
19	10	50	45	Rockville Center, N. Y.	6	18	32	23
14	32	40	84	Salem, Mass.	9	2	10	4
83	148	255	372	St. Louis, Mo.	36	28	77	64
85	220	312	504	St. Paul, Minn.	63	91	135	143
58	98	245	219	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Wash.	183	208	551	490
..	..	..	..	Springfield, Mass.	40	17	69	47
24	29	141	75	Stamford, Conn.	..	..	..	..
..	..	..	..	Trenton, N. J.	2	2	2	4
..	..	..	..	Utica, N. Y.	2	1	11	2
58	223	292	667	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	16	1	23	9
12	19	39	48	White Plains, N. Y.	5	0	20	6
70	46	163	158	Wilmington, Del.	1	8	5	13
59	100	216	315	Worcester, Mass.	..	..	..	..
48	34	80	96	Yonkers, N. Y.	..	..	..	..
2623	5566	7179	12,230	*Totals*	2456	2225	5340	4390
—52.9		—41.3		*Percent Change*	+10.4		+21.6	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.



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INSULATORS • CABLES

Incorporate Dielectric ignition assemblies into its design and you assure your oil burner of the best in electrodes, insulators, bus bars or cables. All parts or assemblies are guaranteed to meet Underwriters' Laboratories, Inc., requirements.

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Dielectric engineering service is fast, economical, cooperative. Write for catalog.

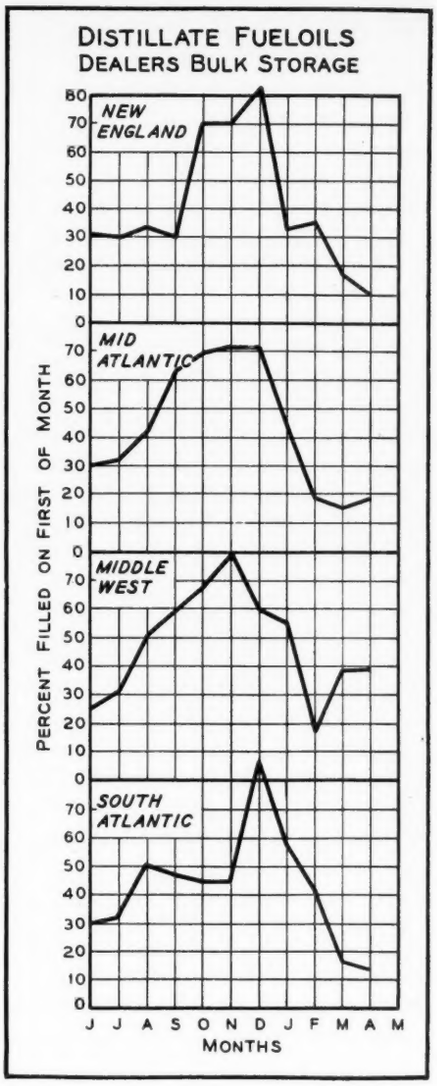
DIELECTRIC
PRODUCTS CO., Inc.
125 Virginia Ave., Jersey City 5, N. J.
Boston • Philadelphia • Des Moines

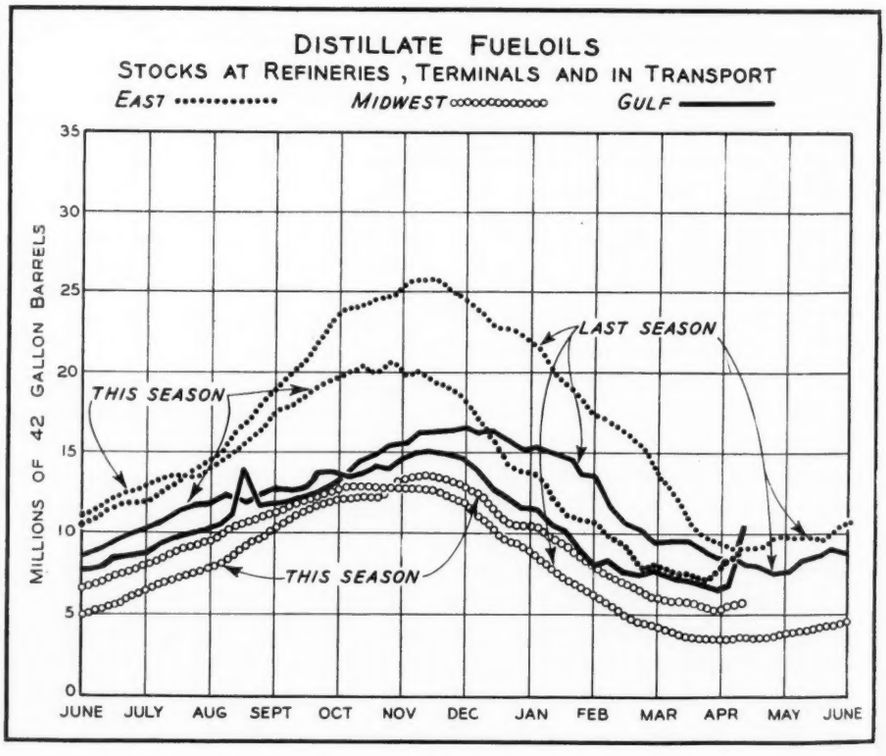
Fueloil Supplies

LOCAL FUELOIL distributors had on hand on April 1 distillate stocks equal to 21% of their storage capacity. This compares with 23% on March 1, and with 23% on April 1 a year ago. Kerosene stocks on April 1 stood at 29% of dealer storage capacity, compared with 27% on March 1, and with 35% on April 1, 1946.

	DEALER STOCKS (Thousands of Barrels)	
	No. 2 or 3 Distillates	*No. 1, Range, Kerosene*
East Coast		
4-1-48	2,458	979
4-1-47	3,928	1,567
Midwest		
4-1-48	1,532	809
4-1-47	563	625
East of Rockies		
4-1-48	3,990	1,788
4-1-47	4,491	2,192
Percent Change	—11.2	—18.4

Distillate stocks at refineries, in primary storage or in transit on April 24, the latest available data, were 23,204,000 Bbls. in the area East of the Rockies, compared with 21,480,000 Bbls. for the corresponding week of the previous year, a rise of 1,724,000 Bbls., or 8%.


DISTILLATE FUELOILS
DEALERS BULK STORAGE
NEW ENGLAND
MID ATLANTIC
MIDDLE WEST
SOUTH ATLANTIC
PERCENT FILLED ON FIRST OF MONTH
0 10 20 30 40 50 60 70 80
J J A S O N D J F M A M
MONTHS


DISTILLATE FUELOILS
STOCKS AT REFINERIES, TERMINALS AND IN TRANSPORT
EAST
MIDWEST
GULF
MILLIONS OF 42 GALLON BARRELS
0 5 10 15 20 25 30 35
LAST SEASON
THIS SEASON
THIS SEASON
JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE

Consumer Opinions on Fueloil

Families in 32 States Tell What They Think and What They Want

OILHEATING MEN HAVE long held the opinion that families enjoying the comforts and conveniences that come with oilburners would be willing to give up a lot of other things if necessary to retain the better living conditions to which they had become accustomed.

This viewpoint has often been stated to oil industry leaders, yet there was always some reservation because the oilburner man knew that he was too directly interested to be completely objective.

The idea that in a period of tight supplies of all petroleum products special attention should be given to heating oils was first expressed publicly by Robert Gray of FUELOIL & OIL HEAT before the Fueloil Distributors Assoc. of N. J., something over a year ago (April 24, 1947).

This thought has been kept alive through various subsequent articles in the magazine, but it has encountered a very considerable resistance from some key individuals in the oil industry.

Following the widespread unfavorable publicity on oilheating of the past winter, it seemed desirable to either get some proof of the public's preference for fueloil or else abandon the idea that this preference existed.

An outside professional consumer opinion sampling organization was called in and given the job of discussing the whole matter with the public. The organization chosen to make the survey was Benson & Benson, Princeton, N. J., Lawrence Benson, head of this group, is also general manager of the well-known "Gallup" polls, which are syndicated in newspapers in the name of the "American Institute of Public Opinion." The same experienced field reporters used on the Gallup polls conducted this survey.

Two principal questions were given to Benson & Benson to be developed along the lines of their experience. These questions were:

1. How much impairment of public acceptance of oilheating has resulted from the troubles of the past winter?
2. In a period of generally tight supply of all petroleum products what needs should be filled first, in the opinion of the public?

It will be seen from the detail of the report that follows that oilheating has lost much ground, and also that in a period of tight petroleum supply, the public overwhelmingly votes to furnish fueloil for heating homes and apartments before all other petroleum applications.

The survey was purposely made during April so as to be near the end of the heating season. It was recognized that in this way the answers would reflect the greatest impact of the past season. If the study had been made some months later, obviously many of those interviewed would have shown a higher degree of confidence. Nonetheless, we felt it important to measure the lowest ebb, so that oilburner and fueloil men will know how much of a job lies ahead of them to reestablish public confidence. Proof that this job is not an impossible one is shown on the chart "Why Not Changing to Oil" which shows that 59% of those families that were considering oilheating and have since given up the idea, did so because of uncertain fueloil supply. Before many months this group will be reassured.

On two of the charts, "Plan Conversion to Oil" and "Why They Like Oilheating," comparisons are shown with a 1945 survey, made by FUELOIL & OIL HEAT. None of the charts were included in the report submitted by Benson & Benson, but they have been added to give special emphasis to some of the high spots.

The area embraced in the survey was the northern half of the country covering 32 states as shown on the map. The full text of the Benson & Benson report starts on the next page.

PUBLIC OPINION SURVEY

Purpose

This survey was conducted by Benson & Benson, Inc., Princeton, New Jersey, for the purpose of determining public attitudes on subjects relative to the oil industry. More specifically, information was sought on use of oil for home heating; about attitudes toward the recent gasoline and fueloil shortage; and about the fairest priority system which the oil industry could establish in the event of future shortages.

Interviewing

All interviewing was completed between March 26 and April 5, 1948 by experienced interviewers. It should be pointed out that during this period a coal strike was in effect, which may or may not have affected the answers to some of the questions.

Sample

Interviewing was restricted to the northern half of the United States, covering the states indicated on the map. A total of 756 interviews was obtained representing an accurate cross section of the total adult population for these states.

Questionnaire

All of the questions were carefully pre-tested by members of the Benson & Benson staff. The contents of the questionnaire was approved by the client before the actual survey began.

Interpretation of Findings

In interpreting the following findings the limitations inherent in a sample of the size used in this survey must be kept in mind. It has been our experience that a sample of this size will be accurate to within six percentage points in about 96 cases out of 100. This sampling error due to number of cases alone will generally be less.

In those instances where the percentages are based upon a *part* of the total sample, the error may be larger than that for the whole sample.

SURVEY HIGHLIGHTS

Six people out of ten believe that we have recently had an oil shortage of either *very* serious or *fairly* serious proportions.

Fourteen per cent reported that they were personally inconvenienced by the recent oil shortage. However, of those having oil furnaces, 38% say they were personally inconvenienced.

Of those inconvenienced, about 1 in 4 reported being without any oil at all for a period of time; and 1 out of 10 had to utilize some other form of heating. Seven per cent referred specifically to having to pay higher or exorbitant prices.

Thirty-seven per cent of those who knew there was a shortage are ready to place the blame on some person or group. *One-fourth of these blame the "big oil companies" and the producers directly.* Next in this undesirable position are Government officials and agencies, which were mentioned by one-fifth. Lumping together those who blame the big oil companies, the dealers, oil speculators, and the black market operators, we find that *about half of the blame is placed on someone connected with the oil industry.*

The public lacks confidence in the ability of the industry to resolve the causes of the recent shortage prior to the next heating season. Only 16% of the people feel that there will definitely *not* be a shortage next winter. Thirty-seven per cent believe that there will be another shortage of oil next winter, while an additional 35% say they do not know.

One in every four people thought that some groups of users had received better treatment than others at the hands of the oil companies during the recent shortage. *The top five groups which were believed to have benefited from this favoritism are, in order: railroads, electric light and power companies, bus operators, factories and mines, and commercial truck operators.*

Eight out of ten believe that, in any future shortage, certain groups of users *should* have their needs filled ahead of others. *However, the outstanding leader in this respect is none of the five mentioned immediately above, but is, instead, homes and apartments (63%).*

Next in line comes electric light and power companies (38%), followed by farm tractors and equipment (31%), and factories and mines (31%).

Despite the fact that respondents were told in a previous question that many electric companies can burn either coal or oil, the electric light and power companies appear in second place in list of users to have their needs filled first. This is not surprising when it is remembered that people are primarily interested in their own comfort and well-being. Electricity is virtually a necessity, both on the modern farm and in the modern home. People want their homes heated, and lighted, and they want the power with which to operate essential home and farm equipment. Hence, sensing perhaps that there is more than enough oil to heat their homes, they are saying "take care of my electric supply, too."

Although the people feel electric companies should convert in times of oil shortage they also appear to be disinclined to quibble about what fuel the electric companies do burn to produce electricity—just so the electricity is available at the flick of their home switch. If the electric companies insist on burning oil the public in effect is saying give it to them—but take care of homes first.

Group Variations

Detailed analysis reveals that this same ranking of groups to receive preferred treatment holds true when the total sample is broken down into component groups. Men feel the same way about it as do women. Oil users and non-oil users, those residing in different parts of the country, people in different age groups, all feel the same way. In the education breakdown, college-trained persons give even more votes for the electric companies than do those with only a grammar school education.

These results and respondents' comments during the interviews clearly indicate that there was no general misunderstanding of the question; but that people just felt that the electric companies should get oil priorities, second only to homes, if such companies were not required to convert or did not do so of their own accord.

On the other side of the ledger, the people say that the group *least entitled to get its needs filled is the passenger automobile group, by about a two-thirds majority (63%)*. The second in this respect is offices and stores, mentioned by only 9% of respondents.

Approximately half of the people believe that electric light and power companies which are now burning oil can switch to coal. A high percentage (40%) don't know if these companies can switch or not.

Nearly 60% believe that the railroads have coal burning engines which can be substituted for their oilburning engines; and again, a high proportion (one-third) do not know whether a change-over could be made or not.

One interesting difference between opinions on the railroads and opinions on the electric companies is that 15% believe that it is *not difficult* for the utilities to switch over to coal in times of an oil shortage, while twice that number (29%) believe that it is *not difficult* for the railroads to switch over.

When people were asked if railroads and electric companies should be *required* to switch from oil to coal in times of an oil shortage, the results were almost identical. In each case, approximately seven-tenths believe that these corporations should be required to switch to coal burning equipment. Only about one-eighth believe that they should *not* be required to switch.

Of the people who are now using oil furnaces for home heating 17% want to change to some other fuel, principally because of the recent shortage or fear of another shortage, or because of the expense of oil.

For the 83% who do not wish to change, the principal reasons include convenience, general satisfaction, cleanliness and efficiency of the heating.

Sixteen per cent of all those using coal have thought of switching to oil in the past year but have now changed their mind and are not now considering doing so. Almost two-thirds (63%) mentioned *the shortage,* the uncertainty of supply, as the main reason, and almost one-third (32%) mentioned the expense of oil as the main reason for frightening them away from oil.

Of the coal users 7% say they are currently considering switching to oil.

Conclusions

In the home heating market three points stand out:

1. Three-fourths of all coal users say that they have not, within the past year, considered switching to oil.
2. Of the remaining quarter who considered changing to oil in the past year, 2 out of every 3 have abandoned the idea and will stick to coal.
3. The chief reasons for the loss of interest in oil by those who recently favored it are fear of another shortage, and the high cost of oil.

It seems apparent therefore that in not providing adequately for home heating the oil industry has to a considerable extent traded the good will of the general public for that of industrial users.

Where the whole public is concerned, favoring the few over the many is dubious strategy.

Also the oil industry appears to have incompletely or ineffectively informed the public of the facts causing the shortage in that about as many people say it was caused by *exports* as say it was due to the inability of domestic transportation and storage facilities to take care of the expanded demand.

Here is obvious need for more complete or more effective public education. The facts being what they are this should be relatively easy of accomplishment.

More difficult and more serious are the problems presented by—

1. The belief held by a consequential minority that the shortage was *artificial, and deliberately engineered by the industry itself,* and
2. The belief that several groups of *industrial users received favored treatment at the expense of homes and apartments.*

This kind of public opinion is damaging to the oil industry; whatever steps are necessary from a production and public relations standpoint should be taken to correct it.

It is clear that the public wants and expects homes to be taken care of before all other groups. If supply next winter is again inadequate to meet over-all demand, the industry should anticipate a less tolerant and a more exacting public attitude.

Hence, if there is likelihood of another shortage next season the industry should be prepared to explain to the public not only the intense effort being made to increase supply and provide transportation, but also how the oil industry is allotting available supplies among various groups of users.

In this allotment policy and all publicity pertaining to it the oil industry should never forget that homes come first in the public's mind. In our opinion, any policy or program which results in shortage for home heating and plenty for other groups is likely to meet a rising tide of public resentment.

Therefore, if the oil industry cannot supply the requirements for home heating it should be prepared to prove that railroads and others who could use existing coal burning equipment are doing so.

It seems clear that the oil industry would be in an extremely vulnerable position if it supplied the "big corporations" needs and at the same time homes had to be inadequately heated. Such is the manna on which politicians, demagogs, and communists thrive. Why should the oil industry feed them?

Detail of Questions

SAMPLE COMPOSITION

	Survey Sample %
Age	
18-29	18
30-49	47
50 and over	35
Sex	
Men	50
Women	50
Education	
Grammar School	33
High School	45
College	22
Occupation	
Business and professional	22
White collar	20
Skilled, semi-skilled, other	42
Farmer	16
Section	
New England	10
Middle Atlantic	33
East North Central	28
West North Central	16
Peripheral South	4
Mountain	3
North Pacific Coast	6
City-size	
Farm residents	13
10.000 and under	38
10,001 to 100,000	20
100,001 and over	29

METHOD OF HEATING THE HOME

Question 1a: I'd like to ask you how your home is heated. Do you have a furnace (central heating) in your home?

b: What kind of fuel does it use?

		Total
Cases		756
		%
Have OIL Furnace	18	
Have COAL Furnace	42	
Have GAS Furnace	9	
Use OTHER FUEL in Furnace	1	
		70
Do not have Furnace		30
		100

DESIRE TO CHANGE FROM OIL TO SOME OTHER FUEL

Question 1c: Would you like to have it changed to some other kind of fuel? (Asked only of those who have a furnace and use OIL.)

Cases	139
	%
Yes	17
No	83
	100

REASONS FOR WANTING TO CHANGE FROM OIL TO SOME OTHER FUEL

Question 1c: Would you like to have it changed to some other kind of fuel? (Asked only of those who have a furnace and use oil.)

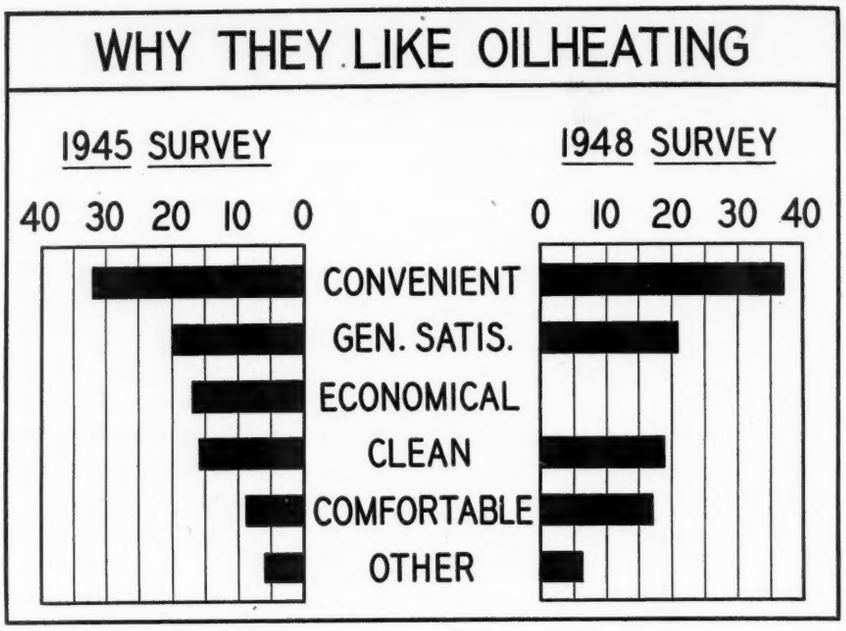
d: Why?

	Cases
Oil shortage, oil is (will be) hard to get	8
Oil is (will be) too expensive	8
Other fuels give more comfort, more heat	7
Gas is cheaper	3
Oil is inconvenient	2
Electricity is cleaner	2
Oil is difficult to install	1
Other fuels easier to use	1
Just like gas better	1
	33

The table above shows only the reasons of those who want to change from oil to some other fuel ("Yes" on 1c). The table shows 33 answers given by 23 respondents. Due to the small number of people who were asked this question, the results are shown in *cases, not percentages.*

REASONS FOR NOT WANTING TO CHANGE FROM OIL TO SOME OTHER FUEL

The following table shows only the reasons of those who do *not* want to change from oil to some other fuel ("No" on 1c).



Cases		113
		%
Convenience:		
Oil is convenient, no work to it, easy to use	26	
Oil burner is automatic	6	
There are no ashes to haul	3	
Oil is easy to regulate	1	
Leaves more time for other things	1	
		37
General satisfaction:		
Just prefer oil	16	
Am satisfied with oil	3	
Oil has given satisfactory service	2	
		21
Oil is cleaner		19
Efficiency:		
Oil gives more heat, more efficient heat	8	
Oil gives more even heating	5	
Oil is reliable	2	
Oil is more comfortable	2	
		17
Expense:		
Reconversion is too expensive	2	
Can't afford the change	2	
		4
Other:		
Oil doesn't take up a lot of space	1	
Other fuels are as hard to get as oil	1	
Got all the oil I needed last winter	1	
		3
Don't know		33
		134

Column totals more than 100% because some respondents gave more than one reason.

DESIRE TO CHANGE FROM COAL TO OIL

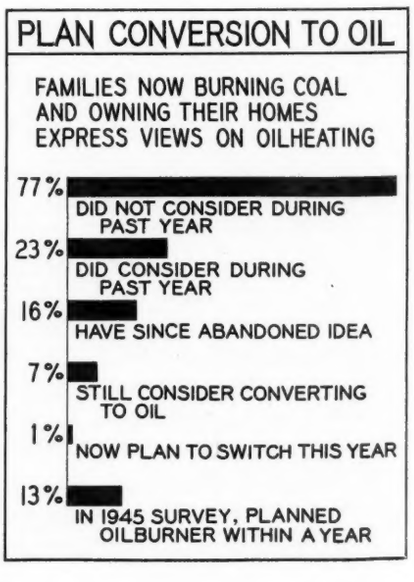
(Asked only of those who have a coal furnace, and who own their homes.)

Question 2b: Have you (your family) seriously considered switching from coal to oil in the past year?

c: Are you (your family) now considering changing from coal to oil?

Cases	200
	%
Have thought of switching to oil in the past year and still consider switching	7
Have thought of switching to oil in the past year but are *not* now considering switching	16
Have *not* thought of switching to oil in the past year	77
	100

Those who said they are now considering changing from coal to oil were then asked Question 2d, "When do you (your family) expect to make the change?" Out of all the coal users who owned their homes, there were only 14 persons (7%) who could be asked this question in this study. Here is the distribution of the answers of the 14 per-


PLAN CONVERSION TO OIL
FAMILIES NOW BURNING COAL AND OWNING THEIR HOMES EXPRESS VIEWS ON OILHEATING
77%
DID NOT CONSIDER DURING PAST YEAR
23%
DID CONSIDER DURING PAST YEAR
16%
HAVE SINCE ABANDONED IDEA
7%
STILL CONSIDER CONVERTING TO OIL
1%
NOW PLAN TO SWITCH THIS YEAR
13%
IN 1945 SURVEY, PLANNED OILBURNER WITHIN A YEAR

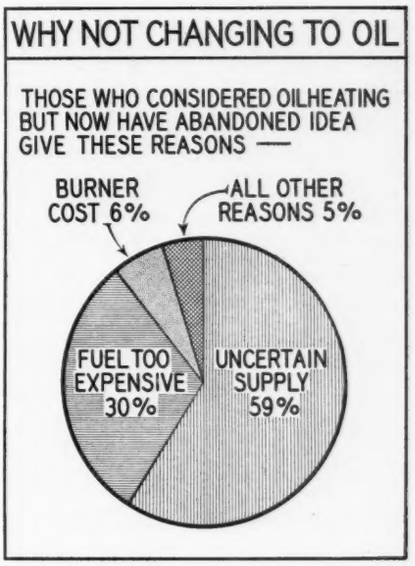
sons: within a year—2; more than a year—4; when I can afford it, when prices fall—4; soon, sometime—3; don't know—1.

REASONS FOR NOT NOW CONSIDERING CHANGING FROM COAL TO OIL

Those who own their own homes and have a coal furnace and who are not now considering switching to oil, were asked "Why?"

	Those who have thought of switching to oil in the past year, but are not now considering switching	*All those who are not now considering switching to oil*
Cases	32	185
	%	%
Fueloil shortage, uncertainty of supply	63	33
Oil is more expensive than coal, cannot afford oil	32	29
Satisfied with coal, like coal better, coal more reliable	3	23
Too expensive to convert or reconvert	6	4
Just prefer other fuels, just don't like oil	—	4
Oil is not safe, dangerous	3	3
Miscellaneous:		
May sell house, will move soon, just put coal in, installing automatic stoker, you can always burn wood if coal is hard to get, but you can't use anything in place of oil, will wait for more propitious times	6	5
Don't know	6	20
	119	121

Columns total more than 100% because some respondents gave more than one reason.


WHY NOT CHANGING TO OIL
THOSE WHO CONSIDERED OILHEATING BUT NOW HAVE ABANDONED IDEA GIVE THESE REASONS —
BURNER COST 6%
ALL OTHER REASONS 5%
FUEL TOO EXPENSIVE 30%
UNCERTAIN SUPPLY 59%

KNOWLEDGE OF RECENT SHORTAGE

Question 3a: As far as you know, was there a gasoline and fuel oil shortage during the past winter?

b: How serious a problem do you think this was—very serious, fairly serious, or not at all serious?

		Total
Cases		756
		%
Knew there was a shortage and thought it:		
Very serious	27	
Fairly serious	34	
Not serious	10	
		71
Did not know there was a shortage		29
		100

INCONVENIENCE CAUSED BY SHORTAGE

Were you inconvenienced during the past winter by the shortage?

		Total	*Those who have oil furnaces*
Cases		756	139
		%	%
Were inconvenienced by the shortage	14	38	
Were *not* inconvenienced by the shortage	57	38	
		71	76
Did not know there was a shortage		29	24
		100	100

WAYS IN WHICH PEOPLE WERE INCONVENIENCED

(Asked only of those who said they were inconvenienced)

Cases	105
	%
Had to cut down on consumption, couldn't get all I needed	34
Forced to lower temperature of house, office, business, church	29
Had to be without any oil for a period of time	23
Had to close off rooms or part of house	9
Had to use other equipment for heating, buy a house with a coal furnace	9
Had to pay an exorbitant price, higher price	7
Had to wear extra clothing	3
Could not get oil for cooking	2
Was hard to get gasoline and oil for truck, automobile	2
Miscellaneous:	
Had to move in with friends, was held up on purchase of an oilburner, couldn't get products made by machines which burned oil, could only get wrong grade oil which turned to parafin wax	4
Don't know	1
	123

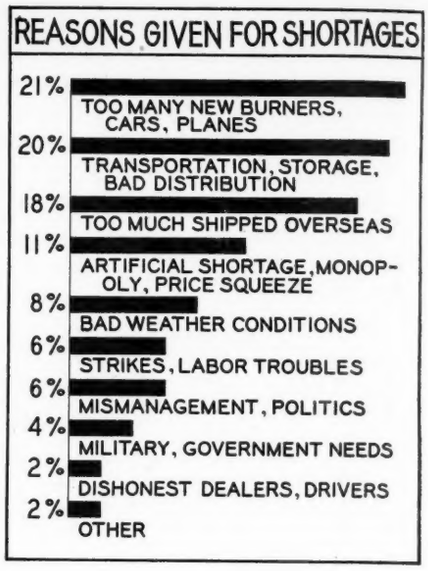
Column totals more than 100% because some respondents mentioned more than one inconvenience.

REASONS FOR RECENT SHORTAGE

Question 4a: As far as you know, what do you think were the reasons for the recent gasoline and fuel oil shortage? (Asked only of those who knew there had been a shortage.)

Cases	540
	%
Transportation difficulties, storage facilities lacking, poor distribution	21
Too much shipment of oil overseas	19
Artificial shortage—monopolistic practices, oil companies holding for higher prices	11
More demand for oil, greater use	10
More home users, too many people converted to oil	9
Bad weather conditions caused extra use, caused bad transportation tie-ups	8
Strikes, labor trouble, labor shortage	6
Government stockpiling, military uses, shortage due to war	4
Not enough productive facilities, underestimate of probable demand	3
Mismanagement, politics, lack of cooperation within the industry	3
More cars, trucks, planes	3
Black market, dishonest dealers, drivers, unfairly distributed	2
More industrial users	2
Miscellaneous:	
Hoarding by individuals, government controls, insufficient source of supply, increased use by raliroads, companies didn't put it out because of income tax, too expensive to distribute it	3
Don't know	20
	124

Column totals more than 100% because some respondents gave more than one reason.



WHO IS BLAMED FOR THE RECENT OIL SHORTAGE

Question 4b: In your opinion, was any person or any group to blame for this shortage? (Asked only of those who knew there had been a shortage.)

Cases	540
	%
Yes	37
No	52
Don't know	11
	100

WHO IS BLAMED FOR OIL SHORTAGE

(Asked only of those who felt someone was to blame for oil shortage.)

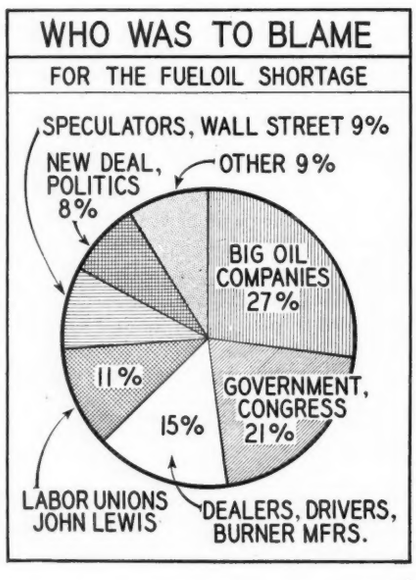
Cases	200
	%
Big oil companies, producers	26
U. S. Government, Congress, Administration, Department of Commerce, people in Washington	21
Dealers, drivers, oilburner dealers and manufacturers	14
Oil speculators, Wall Street, industrialists	9
New Deal Bunglers, political mismanagement	8
Unions, labor, labor leaders	8
John L. Lewis	3
Black market operators	2
Miscellaneous:	
Military, war, Truman, Communists, coal operators, Panhandle Pipe Line Company	5
Don't know	15
	111

Column totals more than 100% because some respondents placed blame on more than one person.

EXPECTANCY OF ANOTHER SHORTAGE NEXT WINTER

Question 5: Do you think that there will or will not be a shortage of gasoline and fuel oil next winter?

		Total
Cases		756
Will be another shortage		37
Will *not* be another shortage		16
Qualified:		
Depends on world conditions, whether or not there is a war	7	
Depends on government action, whether there are controls, whether we change administration, whether we ship overseas	3	
Depends on transportation problem	1	
Other (labor conditions, weather, installation of more home units)	1	
		12
Don't know		35
		100



DID THE OIL COMPANIES PLAY FAVORITES DURING THE RECENT SHORTAGE?

Question 6a: During the gasoline and fuel oil shortage this past winter, do you think the oil companies gave some of these groups of users better treatment than other groups, or were all of these groups of users treated with an equal amount of fairness?

	Total
Cases	756
	%
Some groups received better treatment	25
All groups treated equally	43
Don't know	32
	100

USERS GIVEN BETTER TREATMENT

Question 6b: Which users do you think were given better treatment? (Asked only of those who thought some groups received better treatment than others.)

Cases	188
	%
1. Railroad engines	39
2. Electric light and power companies	38
3. Busses	30
4. Factories and mines	30
5. Commercial trucks	29
6. Ships	26
7. Offices and stores	22
8. Homes and apartments	21
9. Farm tractors and equipment	16
10. Passenger automobiles	16
11. Others (hospitals, schools, theaters)	6
Don't know	7
	280

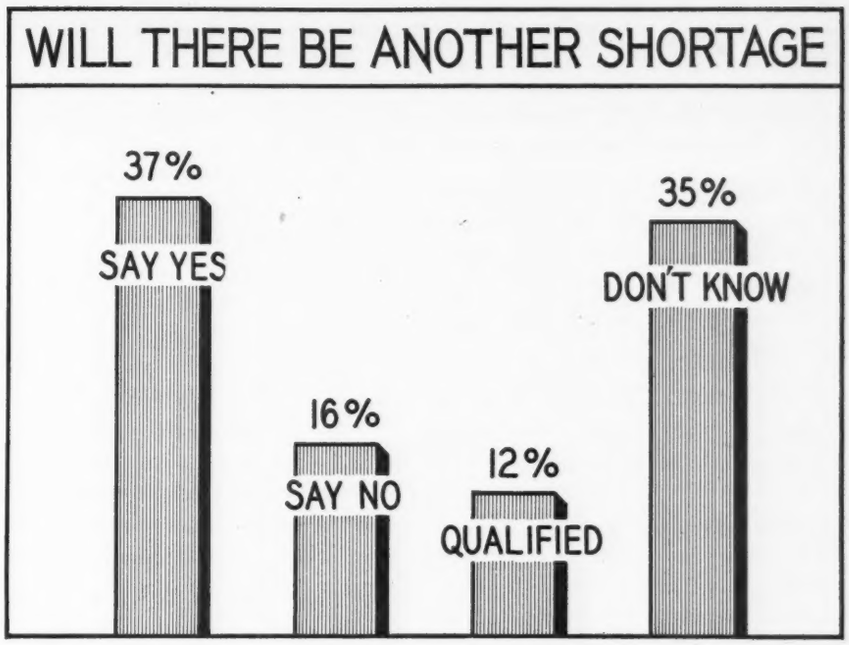
Column totals more than 100% because many respondents mentioned more than one group.

ABILITY OF ELECTRIC LIGHT AND POWER COMPANIES TO SWITCH FROM OIL TO COAL

Question 7a: As far as you know, can electric light and power companies which are now burning oil switch to coal?

b: Would this be very difficult, fairly difficult, or not difficult?

		Total
Cases		756
		%
Yes, can switch		
Very difficult	11	
Fairly difficult	18	
Not difficult	15	
Don't know how difficult	7	
		51
No, cannot switch		9
Don't know if they can switch or not		40
		100



ABILITY OF RAILROADS TO SUBSTITUTE COAL BURNING FOR OIL BURNING ENGINES

Question 8a: As far as you know, do the railroads have coal burning engines which can be substituted for their oil burning engines?

b: Would this be very difficult, fairly difficult, or not difficult?

		Total
Cases		756
		%
Yes, can switch		
Very difficult	6	
Fairly difficult	15	
Not difficult	29	
Don't know how difficult	7	
		57
No, cannot switch		10
Don't know if they can switch or not		33
		100

SHOULD ELECTRIC LIGHT AND POWER COMPANIES BE REQUIRED TO SWITCH FROM OIL TO COAL

Question 9a: Many electric light and power companies do have coal burning equipment available for use so that they can switch over from oil to coal. When there is a gasoline and fuel oil shortage, do you think these companies should be *required* to switch from oil to coal?

		Total
Cases		756
		%
Yes		69
No		12
Qualified:		
Depends upon whether coal can be obtained	3	
Depends upon whether shortage is acute	3	
Depends upon whether it can be done expediently, without loss or interruption of service	2	
Others (as far as possible, not all but some, if it relieves shortage)	1	
		9
Don't know		10
		100

SHOULD RAILROADS BE REQUIRED TO SUBSTITUTE COAL BURNING FOR OIL BURNING ENGINES

Question 9b: Many railroads have coal burning engines which they could use to replace some of the oil burning engines. When there is a gasoline and fuel oil shortage, do you think the railroads should be *required* to use all of their coal burning engines?

		Total
Cases		756
		%
Yes		72
No		12
Qualified:		
Depends upon whether coal can be obtained	3	
Depends upon whether shortage is acute	2	
Depends upon whether it can be done expediently, without loss or interruption of service	2	
Others (as far as possible, if it relieves shortage, if government operated, if city or state laws permit coal burning engines)	2	
		9
Don't know		7
		100

SHOULD SOME GROUPS OF OIL USERS GET PREFERRED TREATMENT

Question 10a: When there is a shortage of gasoline or oil do you think that any of the groups of users on that list should have their needs filled first, while other users would have to switch to coal, or get along with less oil and gasoline than they need.

	Total
Cases	756
	%
Yes	81
No	18
Don't know	1
	100

GROUPS WHICH SHOULD RECEIVE PREFERRED TREATMENT

Question 10b: Which of these groups of users do you think should have their needs filled first? You can mention more than one. (Asked only of those who said some groups should have needs filled first.)

	612
Cases	
	%
1. Homes and apartments	63
2. Electric light and power companies	38
3. Farm tractors and equipment	31
4. Factories and mines	31
5. Offices and stores	18
6. Busses	16
7. Railroad engines	16
8. Commercial trucks	14
9. Ships	10
10. Passenger automobiles	3
11. Others (hospitals, schools, public places)	5
Don't know	1
	246

Column totals more than 100% because some respondents mentioned more than one group.

GROUPS WHICH SHOULD RECEIVE PREFERRED TREATMENT

The results of Question 10b have been broken down by sex and education to provide indications of group opinions. In the various breakdowns, there are fewer cases and therefore the results are not as reliable as for the total.

SEX	*Men*	*Women*	*Total*
Cases	310	302	612
	%	%	%
1. Homes and apartments	67	59	63
2. Electric light and power companies	36	40	38
3. Farm tractors and equipment	33	30	31
4. Factories and mines	33	29	31
5. Offices and stores	17	19	18
6. Busses	19	13	16
7. Railroad engines	17	14	16
8. Commercial trucks	17	11	14
9. Ships	11	10	10
10. Passenger automobiles	2	4	3
11. Others	5	6	5
Don't know	1	1	1
	258	236	246

Columns total more than 100% because some respondents mentioned more than one group.

GROUPS WHICH SHOULD RECEIVE PREFERRED TREATMENT

EDUCATION	*Grammar School*	*High School*	*College*	*Total*
Cases	188	284	136	612*
	%	%	%	%
1. Homes and apartments	59	61	73	63
2. Elecrtic light and power companies	33	40	40	38
3. Farm tractors and equipment	32	32	29	31
4. Factories and mines	27	32	32	31
5. Offices and stores	14	21	16	18
6. Busses	13	19	14	16
7. Railroad engines	14	16	18	16
8. Commercial trucks	14	15	15	14
9. Ships	10	12	9	10
10. Passenger automobiles	4	3	1	3
11. Others	5	6	4	5
Don't know	1	1	—	1
	226	258	251	246

* Total column includes 4 persons who didn't give their education.

Columns total more than 100% because some respondents mentioned more than one group.

THE ONE GROUP CONSIDERED MOST IMPORTANT TO SUPPLY FIRST

Question 10c: Which ONE of the groups of users you have named do you think it is most important to supply? (Asked only of those who said some groups should have need filled first.)

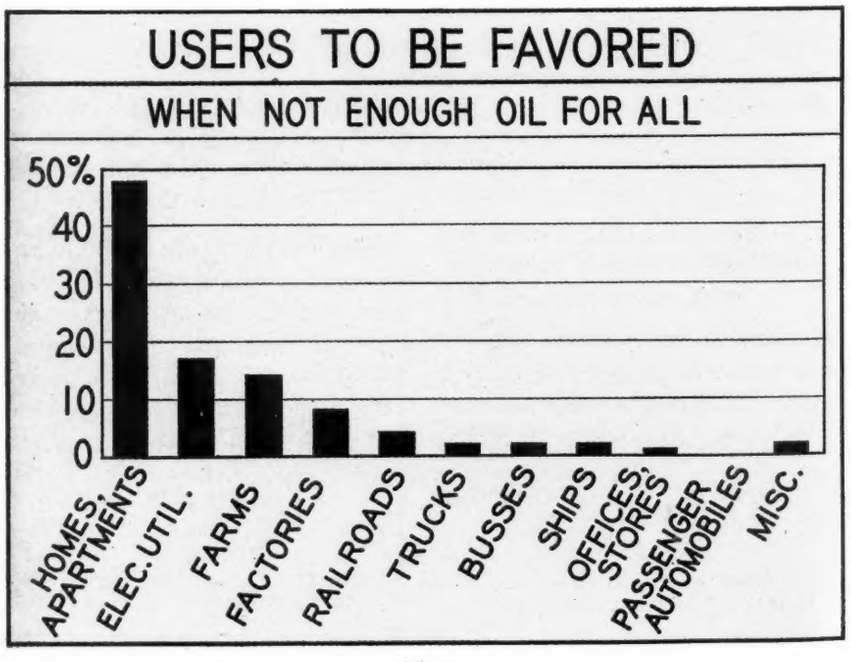
	%
1. Homes and apartments	49
2. Electric light and power companies	18
3. Farm tractors and equipment	14
4. Factories and mines	8
5. Railroad engines	4
6. Commercial trucks	2
7. Busses	2
8. Ships	2
9. Offices and stores	1
10. Passenger automobiles	—
11. Others (hospitals, necessary industries)	2
Don't know	2
	104

Column totals more than 100% because some respondents mentioned more than one group.

GROUP LEAST ENTITLED TO PREFERRED TREATMENT

Question 10d: Which of the groups of users on the list do you feel is *least* entitled to get its needs filled when there is a gasoline or oil shortage? (Asked only of those who said some groups should have needs filled first.)

	612
Cases	
	%
1. Passenger automobiles	63
2. Offices and stores	9
3. Busses	8
4. Commercial trucks	4
5. Railroad engines	4
6. Ships	3
7. Homes and apartments	3
8. Farm tractors and equipment	3
9. Electric light and power companies	2
10. Factories and mines	2
11. Others (those which can convert to coal)	2
Don't know	7
	110



"We Like Replacements"

Careful Work, Complete Records Help Modernization Business

by
A. E. Coburn

BUSINESS is good—the oilburner business, that is—and there is no present expectation that it will slacken this year, according to Fred H. Horne, manager of William N. Frye, Inc., Lake Forest, Illinois. "In the seven months since the first of September we have done 131 oilburner installations, and at the end of March there were five contracts that were yet to be completed," says Mr. Horne. "With everyone in our organization selling all the time, this may be one of the best years in our history."

The unusual thing about the company's sales record this last winter is that almost none of the installations were new. They were replacement sales aimed at making old users burn their oil with more efficiency and to give greater comfort and satisfaction from each oilheating installation.

The company sells no oil, in spite of the fact that Mr. Horne was brought up in the fuel business. A native of Lowell, Mass., he came to Lake Forest in 1945 to manage a business that had been built by William N. Frye prior to his untimely death in an automobile accident. The company's chief business is electrical contracting, plumbing, heating and appliance sales. Its reputation in the wealthy North Shore area above Chicago is good and growing, but it is not known primarily as an oilheating concern. Its six master oilburner installation men and their helpers are a minor part of the 71-person organization, yet they will do a burner business this year that may well be the envy of many an oilheating man.

"We have no secret formula," Mr. Horne tells you. "Like most self-respecting firms, we feel that we do a better job than the run-of-the-mill oilburner dealer, and we are constantly trying to improve every phase of our operation. Our minimum standards are high and going higher all the time. We study our operations constantly with an eye to improving every detail. By ordinary standards we probably are extremely fussy, but we find that it pays."

The company selects its employees with the greatest of care. Competent people are essential to a successful business, according to the principles on which they work, and every applicant for a job, whether for an executive position or for office boy, is carefully screened and appraised before he is hired. Officials like to hire people with a good educational background in the belief that a good formal education is indicative of intelligence. Almost every man in the installation and service department has had some college training, and several are college graduates. "At the union scale of $2.38 an hour we feel we have something to offer the budding engineer fresh from school," says Mr. Horne.

A rating chart is used to evaluate new applicants for jobs. The form is completely filled out by the first interviewer who talks to the applicant, and another is filled out by the sales manager or other executive who interviews the screened applicants. Scores must be high on both charts before an applicant is hired, and he should increase his rating in succeeding months if he is to remain with the company.

Subjects considered in rating an applicant or employee cover first impressions, education, health, family status, civic background, financial background, articulateness, ability to mix with people, loyalty, and ability to sell himself, as well as his past business and military experience.

Every employee to the last file clerk must attend the sales meetings which Mr. Horne holds every Monday night.

EFFECT OF REPLACEMENTS IN TYPICAL CASES

	Carbon Dioxide (CO_2)		*—Draft—*		*—Stack Temp.—*		*—"ON" Cycle—*		*—Efficiency—*	
	Before	*After*	*Before*	*After*	*Before*	*After*	*Before*	*After*	*Before*	*After*
1.	4½%	11½%	.09"	.05"	780°	470°	23 min.	5–6 min.	53%	84%
2.	6	12	.21	.06	860	550	18	4½	58	82
3.	5	13	.18	.04	810	480	16	6	54	85
4.	7	13½	.12	.05	640	420	21	5½	71	86
5.	6½	12½	.08	.05	760	460	14	4	65	84
6.	4½	11	.14	.04	1050	490	23	6	41	83
7.	8	14	.11	.04	940	440	18	5	62	85
8.	5½	13½	.08	.06	880	510	33	6	54	84
9.	7½	12½	.07	.05	790	480	17	5	67	84
10.	5½	13	.18	.04	850	460	22	5	55	84
11.	4	14½	.16	.06	870	490	19	7	43	85
12.	9	12	.11	.04	660	520	27	5	75	83
13.	7½	13½	.13	.05	690	460	15	7	71	85
14.	4½	13	.09	.05	860	480	29	6¼	48	84
15.	6	13½	.07	.04	840	420	16	6	58	86
16.	8½	13	.09	.06	710	510	24	4	74	84
17.	6½	12½	.17	.04	760	500	35	6	65	83

Many of these sessions are quite technical, since sales points and features of the equipment in the company's line are covered in detail. The management believes that every employee should be equipped to sell any goods or services the company offers. If, as sometimes happens, there is no salesman immediately available to take a telephone inquiry on equipment or service, any secretary can supply information that may be required, and though she may not actually close a sale on the telephone, she can at least hold the prospect's interest and respect until a salesman can make the contact. One girl recently talked with so much authority on the electrical characteristics of an electric dust precipitator that she clinched the sale on the telephone. Prospects like to deal with an organization they feel is competent.

Complete Records Kept

Much of the oilburner replacement work is sold by the servicemen on the job, but careful records are kept of every burner the company ever is called to repair. A master card gives all the details of the installation, and all the work that has been done on it. These cards furnish a wealth of information on trouble jobs. Every installation is tested before the service man works on it, and is set for the highest practical operation efficiency before he leaves it. The records show which jobs are causing excessive service and are costly to the owner; which are incapable of efficient operation even though they do not fail too frequently, and which for other reasons should be replaced.

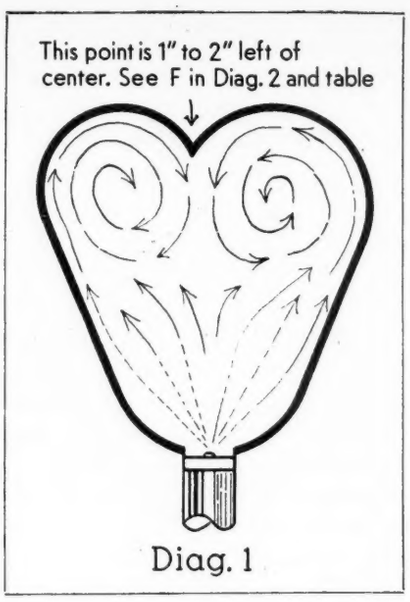
"It should be pointed out," says Mr. Horne, "that we do not get business on the basis of a low first cost. Our minimum price for a replacement burner is $450, but this buys a completely new installation except for the tank and piping. Replacement burners can be bought in our territory for less money, but we have been able to show sufficiently high savings so we have no trouble convincing people that what they pay in first cost for our work they save in future fuel bills and service charges."

Fred Horne asks selected users to write a letter expressing their opinions of the completed work after a job has been finished and has operated for a time. This file of letters from prominent citizens of the town, and from neighbors of the prospect, are a tremendously strong sales tool. Price ceases to be a major consideration when proof of satisfaction is presented.

Because of the above-average level of income in the town, many of the homes have been oilheated for years. A number of burner makes that are all but forgotten are still operating in the community. Two of these old makes have been found to be almost impossible to make operate efficiently, and though the company does considerable oilburner rebuilding and reinstallation, owners of these old and unsatisfactory brands are urged to replace them entirely. A replacement also is recommended wherever the cost of rebuilding and reinstallation will come close to the price of a new burner.

Before any burner is installed, either new or replacement, a complete survey is made of the boiler or furnace and the heat distributing system. This record also is kept for future reference, but an immediate study of the survey serves as a check on what the job will require.

The master mechanic in the installation crew designs the installation on the job before work is started. An installation plan form provides space on one side to record general information on the heating plant and its dimensions, and on the other side is space on the burner installation itself. Information is recorded on a single line covering the firing rate, angle of spray, and pump pressure. The rest of the sheet is given to details of the firebox. It is not by accident that so much attention is given to firebox design, including a scale drawing of the chamber that is to be installed.



Diag. 1

"We are particularly careful of combustion chamber design," Mr. Horne explains, "because we believe it is the most important single detail in an efficient installation. Our experience has brought about the development of a firebox design which we use on all installations. It is a more difficult design to build than the square, rectangular or round box,

Combustion Chamber Design

	DIMENSIONS IN INCHES					
G.P.H.	*Min. Width* "A"	*Max. Width* "B"	*Max. Length* "C"	*Side Height* "D"	*Nozzle Height* "E"	*Point Off-Cent.* "F"
1.00	10	15	15	16	6	1
1.35	11	15	16	16	7	1
1.65	11	16	16	16	7	1
2.00	12	18	18	16	7	1
2.50	13	20	21	16	7½	1
3.00	15	21	22	18	8	1
3.50	16	22	24	18	8	1
4.00	17	23	25	18	8½	1
4.50	17	24	26	18	9	1½
5.00	18	26	28	18	9	1½
5.50	18	26	30	18	9	1½
6.00	18	26	32	18	9	1½
6.50	19	27	34	18	9	1½
7.00	19	27	36	18	9	1½
7.50	19	27	38	18	9½	1½
8.00	19	27	39	19	9½	1½
8.50	19	28	40	19	9½	1½
9.00	20	28	41	19	9½	1½
9.50	20	29	42	20	10	2
10.00	20	30	43	20	10	2

but we have found that this design alone will increase combustion efficiencies by a surprising amount."

The combustion chamber is heart-shaped, and is fired from the bottom or point of the heart. This is a modification of the pear-shaped chamber used by many oilburner installers, but it is claimed to have the advantage of an ability to take a heavy fire for its size.

"The ordinary oil flame is roughly conical with air enveloping it around the outside," Mr. Horne explains. "It is difficult to get air in sufficient volume into the center of the cone of flame. Burner designers have been producing various 'heads' and other air-handling parts specifically to get air into the flame and in intimate contact with the oil spray. We do it by the shape of the chamber, and do not depend on the close adjustment many of the new burners require.

Shape of Chamber Important

"Air coming from the draft tube of the burner will follow the walls of a pear-shaped firebox," continues Mr. Horne. "Usually you will find a dead spot at the rear of the pear-shaped chamber, or a tendency for the air crowding the rear wall to rise or be pushed up and out of the chamber by the new air following. By making a small projection on the rear wall, (Diag. 1) pointing toward the burner nozzle, we are able to lead the combustion air down the walls of the firebox, and turn it back into the flame instead of allowing it to be crowded up and out of the combustion chamber."

The rear wall of the chamber is not stepped forward as sharply as is recommended by many installers. The company has settled on a standard overhang of exactly one inch on all chambers. The top of the chamber is brought forward just enough to give the reflected heat a downward direction into the flame.

The two sides or lobes of the heart-shaped chamber are not equal. Because of the direction or rotation the air handling parts give the flame in the particular burner the firm usually installs, the point is moved an inch or two to the left. If the air cone were designed to give an opposite rotation the point would be moved an equal distance to the right.

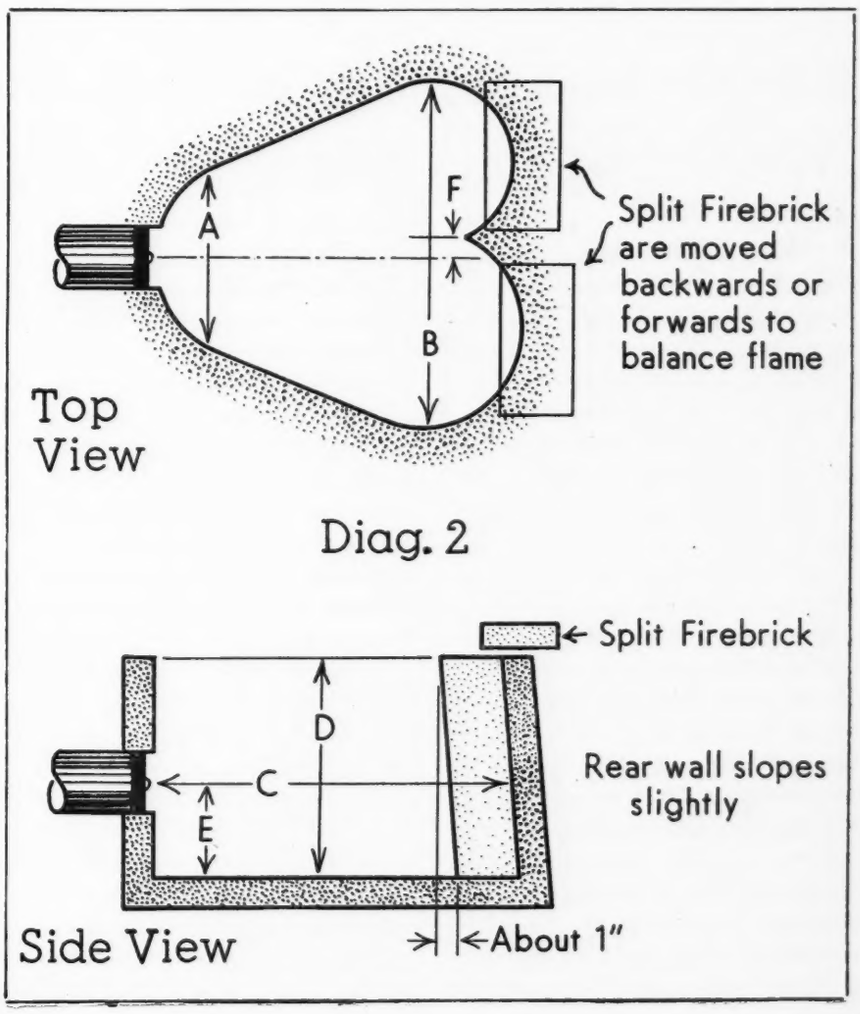
Because it is not practical to try to balance the flame exactly in the construction of the combustion chamber, a split firebrick is used at the top of the lobes to compensate for any variation in design that might throw too much fire to one side or the other. By moving the bricks forward or back the fire can be balanced to fill the chamber equally on each side. Moving a brick forward to cover a greater area of the open space at the top of the lobe tends to retain the fire in that side.

Old hands in the business will recognize several points at which Mr. Horne's firebox design (see Diag. 2 and table) differs from the conventional practice. It should be kept in mind that data cover a particular, highly-developed combustion chamber, embodying a number of features that are not generally recommended.

When the last section of firebox is installed and the installation is fired, the interest of the company in the installation has just begun. Forty-eight hours after the installation has been completed, and the job has been fired, an eight-day test of the installation is begun. Recorders are used to show the on-off characteristics of the job, and firing rate is adjusted to give the most frequent possible burner operation to maintain an even temperature in the heating plant. The average on period in Frye installations is about five minutes when the job is turned over to the customer as completed. The relatively short operating periods require that the burner be operating at higher combustion efficiencies than are usual on domestic installations, since the burner seldom operates longer during its entire cycle than the average burner does in its warm-up period.

Efficiencies, as evidenced by the accompanying table of typical jobs picked at random from the company's files, average about twice those before the replacement was made. Preventable heat loss is cut to the lowest practical level, consistent with dependable operation.

Charts showing the operating time



during the eight-day tests made on each installation are filed with the case history on the job and the layout. On the back of each recorder chart is noted the CO_2 reading during the particular test, and the outdoor temperatures prevailing at the time the chart was on the recorder. All these data are a part of the company's record of the installation.

Record-keeping at William N. Frye, Inc., is a considerable and a continuing job. Allowance is made in the price of each installation to pay for the records that will have to be kept on the installation, and this money is earmarked for this particular purpose. The customer gets the benefit of these records at any time he may need advice or service on his installation. Because of the company's thoroughness in record keeping, it frequently is possible from the nature of the telephone complaint to suggest what may be wrong, and what may be done to supply heat until the serviceman can arrive.

The Frye company has a thriving service business besides its oilburner installation business. Summer cleanups are complete and thorough, concluding with a painting of the boiler face and a firing and combustion test of the completed job. Cleaning bills of upwards of $20 sometimes bring inquiries of the "how come" variety, but the subsequent savings from a clean and well adjusted installation satisfy the customers. The same applies to service and service charges. One new customer who questioned a $30 service charge found that it was the only one he required for the season. He had been accustomed to paying much more in several calls during the period his burner operated each year.

"Our aim is to do a complete and thorough job on each installation we make or service," Fred Horne sums up. "We are not anxious to take the get-it-going type of service call, but always try to get the customer's consent to a complete repair job wherever it is indicated. Complete and unqualified customer satisfaction is good business, both for the customer himself and for us. Yes, business is good."

350,000 Installations in 1948 Workable, Says Fox of Socony

SPEAKING BEFORE THE annual meeting of the Empire State Petroleum Assn. at New York's Hotel Roosevelt on April 19, L. B. Fox, national fueloil department manager for Socony-Vacuum, expressed his Company's view that the addition of 350,000 power oilburners and 650,000 space heaters during 1948 is a workable program. The exact quotation was:

"I am confident enough in the possibilities of the various conservation measures available and the willingness of all who are interested in the well-being of the automatic oilheating business to get behind the program, to believe that a limited number of additional burners may be installed with safety this year. Mr. Bohn, president of the Oil-Heat Institute, recently suggested 350,000 more power driven burners and 650,000 additional space heaters. . . . I believe this would be a reasonably satisfactory goal for this year. The problem is how to make it effective. This is largely up to you who know the situation and are in close touch with the prospective customers."

Since this is the first public statement of the season by a major company to acknowledge that a substantial number of burners can safely be installed without over-taxing fuel supplies, it was the high spot of the convention.

In congratulating the oil industry on the job it had done in 1947, Fox mentioned that in a normal year the industry's over-all product increases average 4 to 5%, but in 1947 had been 10.5%, with individual products rising as follows over 1946:

Gasoline	8.8%
Kerosene	17.0
Distillates	23.0
Residuals	9.0

He made clear, however, that no such increases are possible in another year, inasmuch as all future rises must depend upon net increases in construction of refinery and transportation facilities. He further explained that his optimistic statement on burner installations was predicated on the belief that the voluntary consumer savings of last winter (about 10%) could be retained and that the oilheating industry would do everything possible to save additional oil by selling some replacement burners to cut out some of the oil hogs, and also tune up a large per cent of existing burners to get improved efficiencies. In other words, he was proposing that the oil industry can help the burner people if they in turn cooperate.

E. T. Knight, economist for Atlantic Refining, had a most interesting paper on the gasoline outlook. His conclusions:

1) The next six months will be a critical period in the gasoline economy. Spot shortages may occur in specific areas. However, overall supplies of gasoline will be adequate to meet foreseeable demand and at the same time permit accumulation of sizable stocks of distillate heating oils for the coming season.

2) During the six months following September 30, 1948, a period when gasoline supplies must give way to the requirements for heating oils, it may be expected that consumers' demands for gasoline will be fully met and there will be an accumulation of stocks to levels that will meet the projected demand during the summer of 1949.

J. A. Cogan, Coordinator of Economics, Standard Oil Co. (N. J.), another speaker, brought to the group details on availability of crude petroleum, looking ahead. He finds the present maximum efficient rate of production in this country, including natural gasoline and condensates, to be 5,850,000 barrels a day, and with imports of 450,000, the total available is 6,300,000 B/D. Production in all foreign countries is about 3,000,000 B/D. Proven reserves of underground oil in the world are shown to be:

	Billions of Barrels	*% of World*
United States	25	34
Caribbean	8	11
Other Western Hemisphere	2	3
Middle East	30	41
Russia	6	8
Other Eastern Hemisphere	2	3
Total	73	100

The average U. S. production for

(*Continued on page* 142)

Salem and Horace Davenport

The Unusual Appears Again in Town of The Colonial Witches

by
Robert Gray

SALEM IS AN HOUR'S drive out of Boston on the North Shore, and Davenport is president of the George W. Pickering Co., largest and most imaginative fuel merchant in the area. The story of how the two got together and what came of it is one for the book.

Coal retailing was getting difficult in spots as far back as 20 years ago, when Davenport was a youngster out of school and on the payroll of Lehigh Coal & Navigation Co. His job was digging into the financial and operating records of coal yards that had fallen behind with their bills. One day he was put in charge of a retail creditor that had fallen hopelessly far behind, to see what he could do with it. By slicing off unnecessary overhead in large chunks he had the outfit safely in the black in 18 months.

Then another such assignment, and another. It was not pleasant work for two reasons. First, he either had to be away from home constantly, or else keep moving from town to town, and second, it was not much sport to have to throw out the too numerous family members who were coasting along on the payrolls of the busted coal yards, and substitute bright youngsters from across the tracks who knew that they had to work hard to eat.

Then came the Pickering assignment, to end all assignments. It was the biggest and toughest thus far. Three coal companies were in to their eyebrows—Lehigh, Pocahontas and one other—with total credits of $586,000, or substantially more than a year's gross billing of the yard, and little or no current assets. The year was 1933.

There were two possible courses open . . . liquidate everything, sell the coal pockets and give the creditors a few cents on the dollar, or try and revitalize the business to retain it as a good future coal customer for the mines, and pay the debts out of earnings. The company had been turned completely over to the creditors, in lieu of bankruptcy.

Sensing the difficulty of the undertaking, or so it appeared at the depth of the depression, Davenport made a deal to settle down with his family in Salem, on the conditions that if he could work out the whole debt at 100 cents on the dollar, and in addition pay the stockholders $38,000, he would own the whole thing.

By 1937 the company was his, and the final debts cleared out shortly after that. Gross billing that year was $670,000; last year it was just under five million, showing rather conclusively that when he got control there was no settling back to relax.

The Pickering Company since 1933 has diversified its activities; it has gone into fueloil and oilburners and airconditioning, into home appliances and storm windows, and in its five branch "home comfort" stores it even sells books and operates rental libraries in order to expose more people to its displays of heating and appliances.

Active in Coal Industry

But all of this diversification has never unsold Davenport on the coal business. His whole organization sells coal as hard as it can, considering it basic, while oilheating and fueloil are merchandised as "refinements." And while building from scratch a 23 million gallon fueloil business, the company since 1933 has increased its annual tonnage of anthracite coal from 20,000 to 50,000. During the war Davenport was chairman of the Eastern States Solid Fuel Conference and a leader in the New England Fuel Merchants' Assn. (and still is), while he is also vice-president of the Independent Oil Men's Assn. of New England and a director of the Oil Heat Institute of New England.

A lot of men have built for themselves strong oilheating businesses during the past 15 years. In spite of its ups and downs it has been a good oilheating market, in which the normal business virtues would almost insure some degree of success. Yet in appraising successful oilheating men, it is interesting to try and identify the particular mental slants that have driven them along, that have brought about some of the unorthodox results.

After spending a day and an evening studying Pickering's business, two points in Davenport's thinking stand out. First, (and while this is trite, few people actually do it), he always visualizes his business as being inside the customer's home, never at the coal pockets or bulk plant. He thinks in terms of sales, not purchases. He studies every angle of better living, while more or less ignoring the commodity in itself.

Second, he particularly wants to be surrounded by good men, men of imagination that it's fun to work with, men to whom he can lose half of the arguments. Through the years he has developed several such individuals, and now that they have become not only valuable but also expensive, he finds it desirable to add product lines or other interests to his business, to be able to afford to keep such men around. It was in that spirit that last year he bought as a subsidiary company the Kelly Oil Corp. of Arlington and also the Union Coal & Oil Co. of Fitchburg, putting them in charge, respectively, of Russell B. Hadley and Vernar Anderson, boys he had raised. In adding appliances and storm windows to his retail lines the strongest reason was that he could thus better afford good retail fuel salesmen, since every retail man is trained to sell everything the company handles—there are no "specialists."

Unusual Departments

The internal organization at Pickering's is decidedly out of the ordinary, especially the sales end. There once was a sales manager or "specialist" for coal, another for fueloil and oilheating, another for appliances, and so on. That would be called a "vertical" sales organization, by products. That system was abandoned in favor of a "horizontal" or "end use" system, in which the company now has a retail sales manager who han-

dles everything that goes into a home, and so do all of his field men.

Then there is a wholesale sales manager for all products. His thinking is naturally geared to profit methods for the many dealers that buy Pickering oil and coal in bulk and in turn retail it, because only as those dealers prosper will they stay on the list. The wholesale manager is also in charge of gasoline for the two dozen Pickering owned, but operator-leased, stations.

Third is a manager of industrial sales of all products, and his thinking is centered inside the many shops and mills of the region, visualizing and proposing improvements that will eventually require Pickering fuels or other products.

The full story of Davenport's operation would be book length. For the present, this is a brief overall appraisal. The picture pages that follow bring more of the detail.

retail men, who have the title of "district representative," come in each morning at eight for a half hour sales meeting. On the tote board is posted each man's sales of the week to date. New fuel accounts are shown in gold chalk, all other sales in white.

Each district man has an exclusive territory containing approximately 2,700 homes and in addition to getting credit for direct sales he gets full credit on all house sales for his section.

The district men turn in a daily report on each call made, and if the report indicates a prospective sale for fuel or equipment items, this is transferred to a prospect card that goes into a come-up file for 30 days hence. At that time he is handed the card and must make a progress report on it within two days.

Each man plans his calls for the day in advance, leaves an itinerary in the sales managers office, so that he can be reached if needed.

These district representatives do some things other than sell. They look after the condition of all active accounts in their territories. They handle credits, work out monthly budgets for coal buyers, who are willing to pay 50¢ a ton extra to have their year's coal bill made payable in 12 equal monthly installments, they adjust these coal budgets if purchases are running out of line, they go in at noon to cover the floor in the branch retail stores, so that the women who run them can go to lunch.

These men are paid a base salary, including various allowances of around $52.50 a week. For this they are to keep all existing business reasonably happy. Then on any new business, either equipment sales or fuel accounts, they get in addition two percent. If it is a fuel account, the men get full credit for annual renewals at the 2% rate, if it is an account that they originated. At present prices, this figures to about a quarter cent a gallon on No. 2 oil.

Pickering's retail masterminds are Alice M. Horne, advertising and sales promotion manager, and Timothy J. Noonan, retail sales manager. The company's 16

Miss Horne's direct responsibility, advertising and sales promotion, includes newspaper and radio, as well as the several types of schools and contests that the company runs, of which more later. For direct advertising, the company is ideally situated. All of its retail business is done within a seven mile radius from home base. In that area are seven good towns, Salem, Beverly, Danvers, Peabody, Lynn, Swampscott and Marblehead.

And while the area is almost suburban to Boston, there are local newspapers of good standing, so that it isn't necessary to use the city papers, which would be wasteful in coverage. Then in Salem is a local radio station which blankets the seven-town area, but very little else, so there's no waste.

Typical of newspaper ads is the one shown, "Hello Neighbor," to open doors for the district representatives in their canvassing.

Radio time regularly used includes five spots a day with local (not Boston) weather reports, plus discussions of fuels and other home needs. The spots also explain new contests, cooking schools, and this winter had a lot to say about fuel conservation. So thorough was the oil-saving education that the company's customers voluntarily saved 15% of what they would have used if they had continued last winter's burning rates. This was readily determined by a study

of the "K" factors in the automatic delivery system.

Another indication of how well radio works came Washington's Birthday, when the area had a record heavy snow storm. There was an avalanche of phone calls for coal deliveries, people fearing that deliveries would get snagged and they would run out. It was too much to handle, so the next radio spot explained in effect, "Don't worry folks, we'll take care of you on coal. Don't call in today unless you're about out, because we have emergencies to handle and they are keeping us rushed." The phone calls stopped at once.

The joker was that almost no one called for a week, then all at once, with the trucks rolling far into the night.

In addition to the five spots a day, there is a half hour radio program six nights a week, called "Pickering Pop Concerts," with standard or semi-classic music and no commercials whatever.

Branch store sales are also a responsibility of the Noonan-Horne team. Aside from the main showroom in Salem there are five stores, of which the Beverly store shown at the right, is more or less typical. These stores sell appliances, get leads for heating equipment, but most important, they are convenient places for customers to drop in to discuss fuel contracts.

The upper picture is inside the Beverly store, where the folks appear to be about to start a washer, and hope it will run. Shown, left to right, are Roy Watson, district rep., Gertrude Doyle, store manager, Horace Davenport and Derby Moore, district rep.

The lower picture was in the Danvers store, where manager Mrs. Gladys Pond points out the book department. Book sales and rentals don't gross much volume but add to the store traffic. Notice the sign that says telephone bills may be paid. The company gets three cents for each bill collected, which brings only around $2,500 a year gross, but again brings folks in. Behind the counter is district representative Sidney James.

HELLO NEIGHBOR!

MAY I HAVE A MINUTE OF YOUR TIME?

I'm a District Representative ... and I've sure been through the Mill. Over a long period of time, I've been to school (yes, at my age) and I've learned all about fuels ... quality, and the proper size for particular heating units. I've learned a great deal about fuel oil and oil burners ... and I sort of feel I'm an authority when it comes to your heating comfort.

But, that isn't all .. my company has the finest line of Electrical Appliances to be found anywhere ... featuring GENERAL ELECTRIC. And here again ... I've worked and studied myself into a top-notch specialist on home appliances. Boy .. did I have a lot to learn!

Now ... my company, THE GEORGE W. PICKERING COMPANY has assigned me to your area ... and I'd like to call on you if I may. Talk over your heating problems with you. Perhaps you're in the market for some new equipment. I'd like to feel at the end of my visit with you that I've made a friend, for myself and my company. I don't know just when I'll get to your home ... but I'll be there! I have a pretty big territory to cover and it will take time ... but then, my company's been around for 108 years so I guess they'll be around long enough for me to get to say "Hello" to all the homemakers in my area.

If you want to see me ... don't wait for my call ... why just phone Salem 5500 ... that's my home office ... and leave word and I'll hotfoot it over to see you before you can say "Jack Rabbitt."

I appreciate the time you've given me, and I hope when I ring your bell and hand you my card that you'll have time to sit down and have a real old-fashioned chat about your heating problems and your appliance needs.
Thanks ... see you soon!

Serving North Salem ... Jack Powers
South Salem ... Ray Beianger
East Salem and Salem Willows ... Lennie Spychala

PICKERING
SINCE 1838

211 DERBY ST., SALEM

fuel oil & oil heat

Schools and contests are a big factor in Davenport's sales promotion schedules. These affairs are usually identified with home appliance sales, but such sales are actually only incidental to their real purpose, which is to get people better acquainted with the company.

Appliance sales represent only about one-seventh of the company's total retail sales, and one-twentieth of all sales, yet they attract people to the schools and give the instructors an opportunity to talk about everything, including fuels and oilheating.

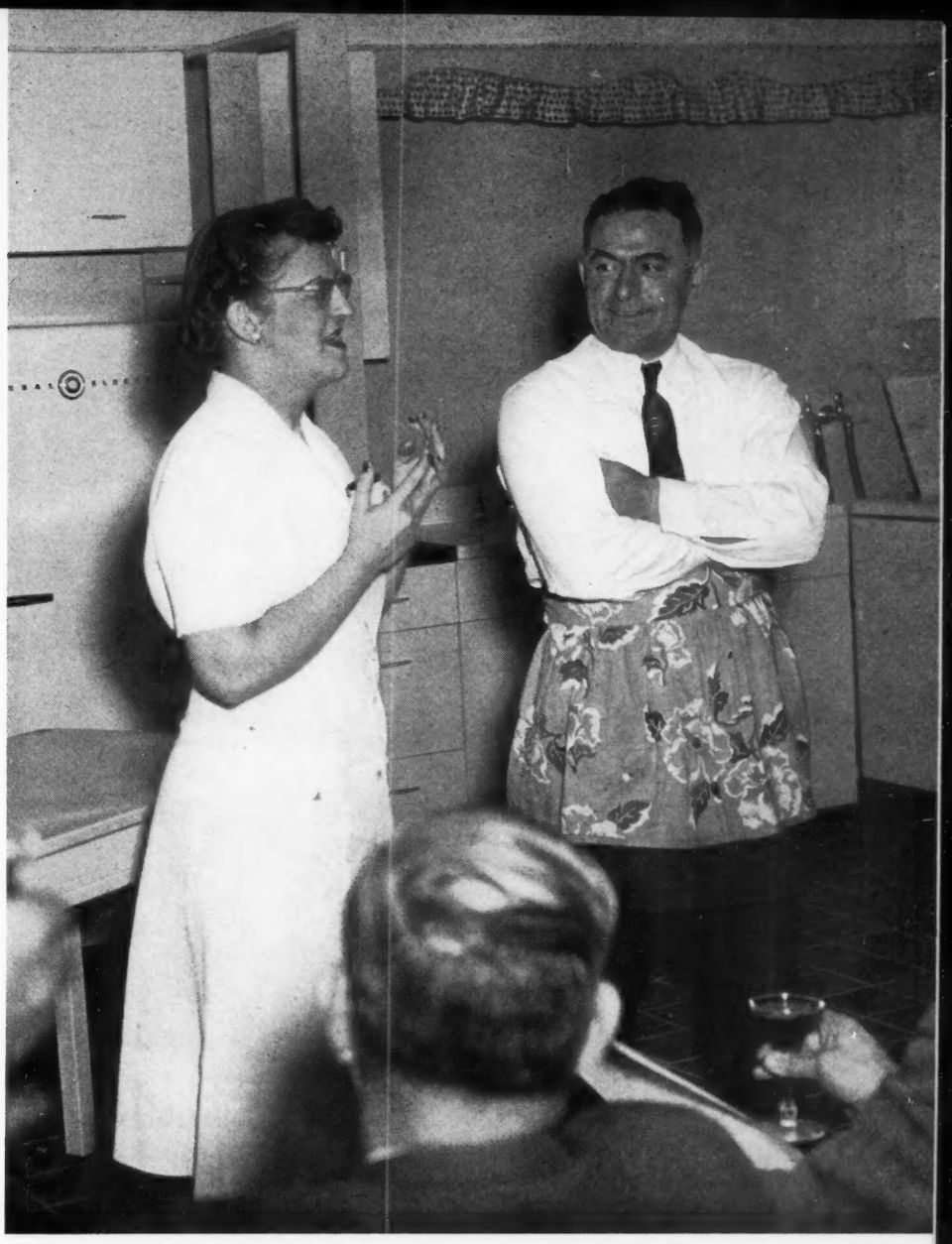
During the past year 1,623 women registered for home-making classes at Pickering's. Several of the groups came for a series of meetings, so total attendance was much larger than the single registrations. Here are the groups that made up the list:

North Beverly PTA Society
Leo Guild of Peabody
Girls Scouts and Leaders (series)
City Government of Salem
Salem Zonta Club
Girl Scouts' Parent (series)
Salem Thought & Work Club
Lynn Women's Catholic Guild
State Home Canning Demonstration
Scouts Graduation
Miss Horne's Group
Salem Women's Club
Bride's School (series)
Kiwanis Club Ladies Night
Eastern States Solid Fuel Conf.
Salem Young Women's Republican Club (series)
Essex County Agricultural School Council
Food Conservation Class (series)
Marblehead Women's Club
Business & Professional Women's Clubs of Gloucester and Salem
Salem Junior Women's Club
Lynnfield Get-Together Club
Beverly Lothrop Club
Clelia Romano Club of Beverly
Women's Auxiliary Club of Lynn
St. Anne's Catholic League (series)
Beverly Health Center
Salem League
Swampscott Women
Women's Recipe Contest (series)
Salem B. P. & W.
Rotary Women
Army Air Force Wives
Quest for Beauty
Grace Church Women

Bride's School, with 175 registrants for a four weeks' series, ended with regular examinations and graduation certificates. Here Mrs. Henry Levesque accepts a diploma from Horace Davenport. Only six of the brides lived in residences of their own.

"Pop In The Kitchen," wherein home service director Mrs. Charlotte Morong instructs City Councilman Charles Beaulieu on the fine points of making biscuits. The seated gentleman is apparently holding the shortening. Thirty members of Salem's city government took the course for one evening. Interesting is the fuel angle in the "sell" at the bottom of the printed menu for the evening:

> "Pop's leisure time will increase and his trips to the cellar decrease if he heats his home with Pickering coal. And if Pop wants to do away with those cellar trips altogether, and end his heating troubles forever, he can have all this—and heaven too—with Pickering's Automatic Oil Heat."



Leo Guild of Peabody, 62 members, in for a session on "Timely Baking."

Employees spend an evening every two weeks learning many things about the company and its products. There are four short talks each night, limited to 25 minutes each. The schedule is printed for six months in advance. For example, here are the subjects for the April and May meetings:

Know the Product Market
Customer Fuel Problems
Gas Ranges
Advertising Why and How
Tested Ways to Close a Sale
Customer List & Budget Situation
Electric Ranges
Sales Promotion Why and How
Five-Step Plan
Planning Summer Fill-Ups
Home Freezers
Stockroom Function
Handling the Prospect Who Stalls
Orange Windows
Public Relations via Home Service

Main office at Salem. Ground floor is show room and general offices running back to the bulk plant. Second floor is executive quarters, third floor sales training. Truck is one of the "Silver Fleet." Not only are all of Pickering's trucks this color, but likewise the trucks of the dealers who buy from their wholesale department.

With approximately 23 million gallons of fueloil last year, four million were bunker oils. Only about five million gallons were retail, the balance wholesale, industrial, or in the Kelly or Union subsidiary companies. Pickering had considerable retail range oil business, but has gradually pulled out of it by picking in each neighborhood some reputable small dealer, turning over the customers and switching the gallonage to wholesale.

Davenport uses perpetual fueloil contracts. When they're signed once they are continued on automatic deliveries until the customer gives 30 days' notice to discontinue. They ride along that way for years.

Pickering service stations, two dozen, are leased to operators, supplied by the wholesale department.

Employees' outing at Davenport's New Hampshire farm.

Clifford L. Belknap, manager of the heating division, installed 500 oilheating jobs last year. The company first sold burners in 1938, took on G-E in 1941, and now has in addition Korth conversion burners.

George W. Smith, Industrial sales manager.

P. J. Flynn, fueloil operations manager, and E. L. Dawkins, burner service manager, in the delivery and service department. Notice the high character of the office setting, with accoustical walls and ceilings, and air conditioning for summer.

Russell B. Hadley, wholesale sales manager. Pickering's wholesale fuel sales are made in the name of New England Distributors, Inc., of which Hadley is president. He is also treasurer and general manager of Kelly Oil Corp., another subsidiary.

J. Carroll Corbett, treasurer of the company, who develops interesting analyses of the retail, wholesale and industrial functions of the business. In the table on retail operations for the fiscal year ending March 30, 1948, notice the comparisons by products of gross profit percentages, then direct expense and operating profit. Oilheating equipment didn't do so well compared with retail sales of fuels, appliances and storm windows.

Retail sales shown in the table are just under a third of the company's total sales—the big volume being in wholesale business, some in industrial.

Charles Andrias, vice-president, and general administrative officer.

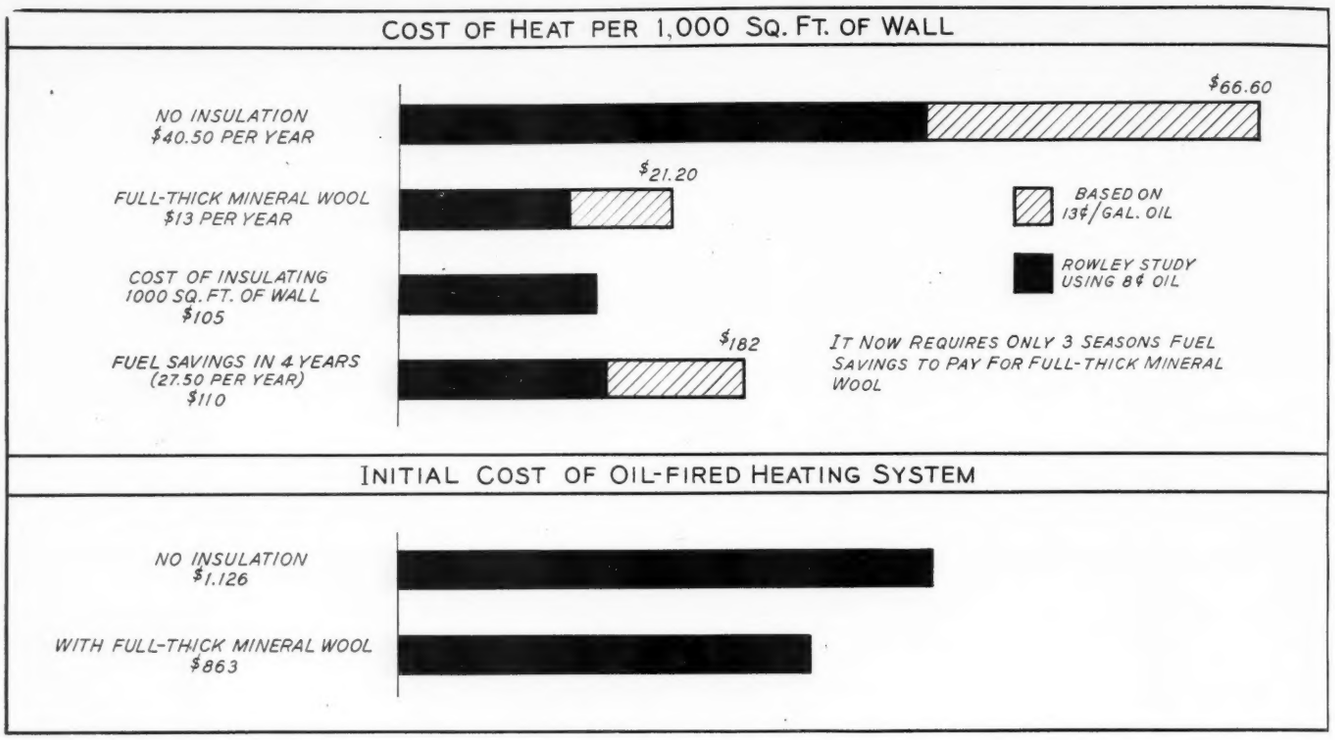
Miss R. J. Fagan, secretary to Mr. Davenport, and general finder of facts and things needed. She has the secret of the Pickering organization — some days it's a madhouse, and if folks are not always serene it's because we have so many irons in the fire. But it's stimulating — new projects are mentioned; in a few days they're studied, tested and under way—we're into something else involving a lot of people and things and money—maybe it's a grind, but it's action and we love it; all the Pickering folks love it.

Operating Analysis—Retail Sales

GEO. W. PICKERING COMPANY

For Fiscal Year Ending March 31, 1948

	Sales	*% Of Total Sales*	*Cost*	*% Of Sale*	*Gross Margin*	*% Of Sale*	*Direct Expense*	*% Of Sale*	*Operating Profit*	*% Of Sale*
Anthracite	605,273	33.9	452,293	74.7	152,980	25.3				
Bituminous	8,153	.5	6,130	75.2	2,023	24.8	87,078	12.2	92,127	13.0
Coke	97,628	5.5	73,426	75.2	24,202	24.8				
Fueloil	485,016	27.2	346,821	71.5	138,195	28.5	44,921	9.2	94,856	19.4
Kerosene	4,982	.3	3,400	68.2	1,582	31.8				
Major Appliances	242,069	13.6	174,468	72.1	67,601	27.9	1,198	4.4	74,274	23.2
Traffic Appliances	31,775	1.8	23,904	75.2	7,871	24.8				
Windows	46,583	2.6	28,700	61.6	17,883	38.4	4,620	10.4	13,263	28.4
Heating Equipment	242,225	13.6	193,419	79.9	48,806	20.1	29,224	11.7	22,045	8.8
Airconditioning	8,228	.5	5,765	70.0	2,463	30.0				
Books	6,820	.4	4,433	65.0	2,387	35.0	..	..	2,387	35.0
Rental Library	1,578	..	..	..	1,578	100.0	..	..	1,578	100
Telephone Collections	2,679	.1	..	..	2,679	..	..	..	2,679	100
Insulation Comm.	421	..	..	..	421	..	..	..	421	100
Miscellaneous	1,315	..	..	..	1,315	..	..	..	1,315	100
Total Sales	1,784,741	100.0	1,312,758	73.5	471,983	26.5	177,821	10.0	294,162	16.5
Selling Expense	..	..	..	..	..	..	..	..	148,605	8.3
Gen. and Adm. Ov'd.	..	..	..	..	..	..	..	..	95,664	5.4
Net Profit	..	..	..	..	..	..	..	..	49,893	2.8



Insulation Saves Burner Costs

Showing How Smaller Heating Plants Serve Insulated Homes

by
Wharton Clay*

IN VIEW OF TODAY'S rising prices for everything the American home owner buys, the economics involved in home heating should be of particular interest to the oil heating industry.

Hit by the mounting cost spiral, home owners everywhere are seeking all possible means to lower their living costs and many may be tempted by the current campaign of the solid fuels industry to persuade conversions from oil to solid fuel. How extensive the results of this campaign will be is anybody's guess, but the oil heat industry would do well to examine the whole situation from the cost standpoint because that can well be the determining factor on whether more oil burners are installed or whether more are taken out of homes. Convenience and cleanliness, the big selling points of oil, can conceivably take a back seat when it comes to cost. Especially is this true today since it has been necessary for producers to materially advance fuel oil prices.

There is a way, however, whereby the cost of heating a home with oil can be held down without sacrificing comfort. This is by complete thermal insulation of the structure. Principal savings produced by insulation include initial cost of the heating plant and fuel consumption. Secondary cash benefits include lowered decorating costs and an annuity value if the money saved is invested at interest.

Application of thermal insulation to a home or other structure has a direct economic relationship to the annual cost of providing shelter, it has been definitely determined by comprehensive scientific study. So close is this economic relationship that structural engineers now assert that the uninsulated building will soon be as outmoded as gaslight illumination.

As any engineer knows, walls and roofs are not designed primarily as heat barriers. Added protection to slow down heat flow is required. When insulation is applied, the heat flow is reduced in direct proportion to the reduction in the over-all coefficients of heat transmission, resulting in a direct decrease in the amount of fuel needed.

Several accurate yardsticks have been developed in recent years to measure the amount of heat wastage. The National Bureau of Standards finds that three inches of insulation in walls and roof area saves 35 per cent of the fuel. The Small Homes Council of the University of Illinois developed the same figure with a one-story frame house and a 32 per cent saving in a two-story frame house.

It remained, however, for Profs. Frank B. Rowley and Richard C. Jordan of the University of Minnesota Institute of Technology, to cover the entire subject of the economics of insulation. In their study reported in Bulletin No. 23 of the university, these two scientists show that the initial cost of an oil-fired gravity hot water heating system could be reduced 23.3 per cent at the time the study was made in 1944. Without insulation, the plant required to heat a

*Engineer, National Mineral Wool Association, New York.

two-story frame house with 70-degree interior temperature and minus 20-degree exterior design temperature cost $1,126. With full-thick mineral wool, cost of the plant was figured at $863. The design heat loss in the uninsulated structure was 116,000 Btu per hour; with insulation it dropped to 49,000.

Cost of fuel on the basis of 8-cent oil was found to be $40.50 per 1,000 square feet of uninsulated wall, but only $13 for the same wall insulated full-thick with mineral wool. This represented an annual saving of $27.50 per 1,000 square feet.

Costs of materials and labor have risen of course since the Rowley-Jordan study was made, but knowing the figures produced by these scientists a heating engineer can readily determine savings on the basis of today's prices.

Application of insulation naturally adds to the cost of a house. The Minnesota study showed that cost of an uninsulated wall was $469 per 1,000 square feet; insulated full-thick with 3⅝ inches of mineral wool the cost was $574, or $105 more.

On the basis of the annual saving of $27.50 per 1,000 square feet, this means that the cost of the insulation would be paid through fuel savings in less than four years on the old fuel prices and that thereafter the savings would accrue as cash benefits, which, if invested, would produce an additional return.

Difference in cost between one inch of insulation and 3⅝ was only $37 but initial cost of the heating plant with one inch of insulation was $912; with 3⅝ inches of mineral wool it was $863. This difference of $49 would more than pay for the additional cost of the thicker insulation.

The items of lowered redecoration costs in an insulated home has not been figured down to a dollars-and-cents basis because different conditions produce different results. It is known, however, that redecoration is not required so frequently in the insulated home. This is because insulated walls and ceilings are within two or three degrees of the air temperature of the rooms. Uninsulated areas are as much as 11 degrees colder than the air. Dust-laden moisture is not deposited so rapidly on the warmer surfaces as on the colder ones.

From these various economic factors involved in insulating, it is easy to understand why 87 per cent of potential home buyers say they want insulation in their homes. And it is why the oil heat industry, by recommending full-thick insulation in both new and old structures, can develop a powerful weapon in the growing competitive fight between fuels.

New Table, Burners by States

IN THE LAST ISSUE appeared the final estimate for oilburner installations in 1947, after getting in all of the year-end official figures on factory shipments, exports, etc. The table that follows takes the new total and divides it up between the states.

Revised 1947 Oilburner Installations and Total Operating January 1, 1948

	Burners in Use 1/1/47	Additions During 1947	Annual Rate of Gain	Burners in Use 1/1/48	Percent of U. S. Total
NEW ENGLAND					
Maine	35,657	13,056	36.6	48,713	1.33
New Hampshire	28,933	10,072	34.8	39,015	1.06
Vermont	10,273	2,459	23.9	12,732	.34
Massachusetts	289,715	62,445	21.6	352,160	9.69
Rhode Island	41,870	6,016	14.4	47,886	1.32
Connecticut	130,839	30,768	23.5	161,607	4.45
Total New England	537,287	124,816	23.2	662,110	18.19
MIDDLE ATLANTIC STATES					
New York State	526,114	141,094	26.8	667,208	18.30
N. Y. City Dist.	385,202	79,542	20.6	464,744	11.90
New Jersey State	259,005	73,681	28.4	332,686	9.12
Newark Dist.	159,215	31,705	19.9	190,920	5.25
Pennsylvania State	212,425	74,514	35.1	286,939	7.83
Philadelphia Dist.	189,242	64,082	33.9	253,324	6.92
Delaware	17,894	4,412	24.7	22,306	.62
Maryland	135,086	31,691	23.5	166,777	4.58
District of Columbia	42,525	5,984	14.1	48,509	1.34
Total Mid-Atlantic	1,193,049	331,376	27.8	1,524,425	41.79
MIDDLE WESTERN STATES					
Michigan	99,562	34,750	34.9	134,312	3.67
Ohio	29,020	18,312	63.1	47,332	1.28
Indiana	30,141	12,300	40.8	42,441	1.15
Illinois	121,521	22,848	18.8	144,369	3.98
Wisconsin	72,597	28,162	38.8	100,759	2.75
Minnesota	110,546	27,127	24.5	137,673	3.87
Iowa	37,457	11,503	30.7	48,960	1.35
Missouri	32,672	25,138	76.9	57,810	1.56
Kansas	4,739	1,354	28.6	6,093	.16
Nebraska	24,856	7,862	31.6	32,718	.89
South Dakota	12,042	5,692	47.3	17,734	.48
North Dakota	10,416	3,980	38.2	14,396	.39
Total Midwest	585,569	199,028	34.0	784,597	21.53
SOUTHERN STATES					
Virginia	61,789	29,008	46.9	90,797	2.49
West Virginia	403	42	10.4	445	.01
North Carolina	23,853	10,602	44.4	34,455	.96
South Carolina	7,229	4,107	56.8	11,336	.30
Georgia	5,851	2,072	35.4	7,923	.21
Florida	21,011	12,101	57.6	33,112	.89
Kentucky	3,032	1,379	45.5	4,411	.11
Tennessee	5,504	2,756	50.1	8,260	.22
Alabama	4,572	1,470	32.2	6,042	.16
Mississippi	987	50	5.1	1,037	.02
Arkansas	1,744	92	5.3	1,836	.05
Louisiana	7,439	1,216	16.3	8,655	.23
Oklahoma	1,200	14	1.2	1,214	.03
Texas	18,628	5,773	31.0	24,401	.68
Total South	163,236	70,682	43.3	233,918	6.36
WESTERN STATES					
Eight Mountain States	44,034	11,636	26.4	55,670	1.52
Washington	102,078	29,618	29.0	131,696	3.59
Oregon	55,664	21,624	38.8	77,288	2.10
California	140,127	40,690	29.0	180,817	4.95
Total West	341,903	103,568	30.3	445,471	12.16
TOTAL U. S.	2,821,044	829,470	29.4	3,650,514	100.00

Combustion Testing Instruments

The Why, How, and When of Taking Efficiency Readings

by
J. W. Schulz

FIRST, you adjust the burner for the lowest firing rate which will heat the house properly on coldest mornings. Of course, you use a nozzle of the proper gph rate and spray angle in a pressure burner, and you check on the atomizing pressure.

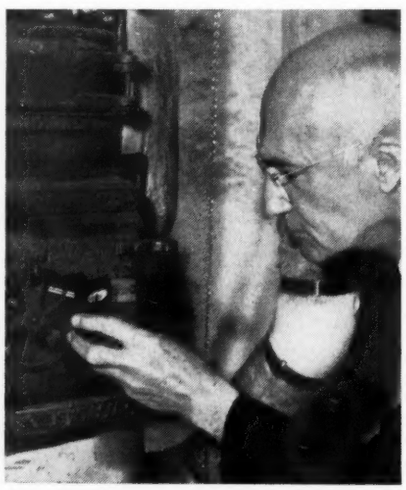
Second, you adjust the smokepipe draft through use of the time-honored rule often published in FUELOIL & OIL HEAT. That is, you set the draft regulator on the smokepipe for the lowest draft which will not invite the troubles of insufficient draft. The troubles of insufficient draft include oil odors in the equipment room and specks of soot on the boiler or furnace. On some jobs, they include combustion noise or flame pulsation.

Third, observing the other rule frequently published in FUELOIL & OIL HEAT, you painstakingly adjust the air damper on the burner; you close this so far that closing it farther would give chimney smoke or cause excessive soot to be deposited in the flues. Simply close the damper so far that anyone closing it farther would get the burner into trouble. Then nobody can say that you are wasting oil by adjusting flames to be too lean and white.

Fourth, though you may have checked for air leaks earlier, you check once more and seal properly and thoroughly any air leaks you find. You block the smokepipe draft regulator in its highest-draft position, keep the burner running, and hold a candle flame close to every crack or joint through which air may leak into the furnace or boiler. You check especially well on the flame observation door and flue clean-out doors and their frames, at the top and bottom of a boiler base, and all around the place where the gun tube goes into the furnace or boiler. By making repairs or using asbestos or furnace cement, you make certain that nobody inspecting the installation later can say that you left it infested with fuel-wasting air leaks.

If you conscientiously take these four steps for tuning a pressure burner to operate at the peak efficiency for the particular installation, why worry additionally about how high the efficiency is? Why take the time to use combustion testing instruments which tell you the efficiency?

Of many good reasons, here's one reason for making combustion tests. Oilfired plants which have been tuned most carefully through use of the preceding four steps actually do show CO_2 readings between 4% and 13%, and stack temperatures between 300° and 1,000°. After you've tuned a plant as best you can, its stack loss may be 15% or 60% or anything in-between. The conscientious burner expert wants to know the stack loss of the plant he's tried hard to make efficient. Although the flame is on the verge of giving smoke, the CO_2 may be 4% or 5% because of poor burner design, a defective nozzle, an inferior combustion chamber, or need for further adjustment of the air-handling parts in the gun tube. Other defects and short-comings, including some which the service man can remedy easily on the job and some which he can't, often cause low CO_2 readings from fires adjusted to be as rich as they can be without giving smoke and soot trouble. Carbon in the gun tube of a burner two months old, for example, caused the CO_2 reading to be 6¼% even while a wisp of smoke came from the chimney, but until he took his CO_2 reading the service man did not know of the carbon deposit and the leaking shut-off valve which caused it. After the gun tube had been cleaned, at 12% CO_2 the flame was cleaner and brighter than it had been at the start with 6¼% CO_2.



Over-fire *draft reading is more important than the smokepipe draft reading. Less than .01" over-fire draft may be sufficient.*

CO_2 for Nozzle Choice

Different makes, models, and spray angles of nozzles, and how they perform on actual installations, can be judged only by taking CO_2 readings. In one warm air furnace, 8½% CO_2 together with clean, bright combustion resulted from using a 1.50 gph, 80° nozzle and 100 lbs. atomizing pressure, but trying to adjust for 9% CO_2 led to chimney smoke. Switching to a 60° nozzle and raising the atomizing pressure to 130 lbs. gave cleaner burning, a CO_2 reading of 11¾%, and 15° lower stack temperature.

To compare different makes and models of burners and arrive at facts about which are relatively inefficient and efficient, a service expert must take CO_2 readings. Certain burners give rockbottom oil consumption because at 10% to 12% CO_2 they give the same brilliant, clean combustion that ordinary burners give only when set for lower than 8% CO_2. Also, certain burners can give clean burning and high CO_2 readings using catalytic-cracked fueloils, while other burners cannot.

To judge combustion chamber material and design, combustion tests must be made. Switching to a modern firebox may cut the fuel consumption of an old installation by 30%. After he installs a new firebox, a dealer can find out quickly how much better it works than the old one. Combustion test instruments will show this in two minutes.

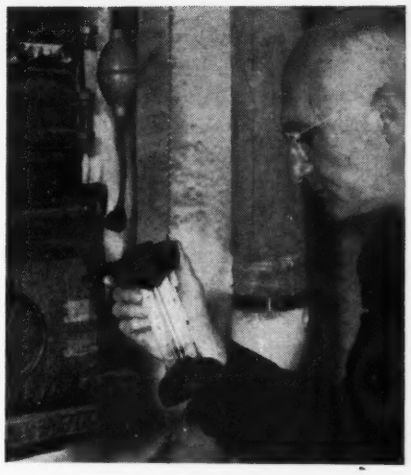
High stack temperature, as much of a fuel-waster as a low CO_2 reading, can be detected only with the help of a stack thermometer. Nothing is more pathetic than to hear a service man say that he does not know what the stack temperature is, but that the smokepipe feels hot and so it seems that high stack temperature is responsible for oversize fuel bills. When a home owner says that a smokepipe feels very hot, one good reply is that it surely does seem hot; so does a steam-filled radiator, and on the most efficient installations the smokepipes are considerably hotter than steam-filled radiators. Loose talk about smokepipe temperatures may be suitable for home owners, but certainly is not suitable for service men who are supposed to know the technicalities of oilheating.

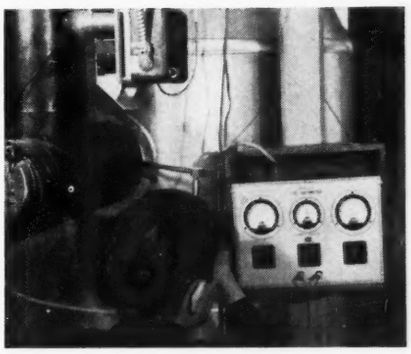
Need Stack Thermometer

Without a stack thermometer, a service man can't state that 950° stack temperature given by a furnace of poor design, for example, causes the high oil bills on a certain installation. He can't state that the 430° stack temperature, given by the newly installed furnace in the house next door, is one of the reasons the oil bills now are 40% lower than they used to be.

An inexpensive hand drill, small enough to fit in a service man's tool box, comes in very handy when combustion tests are to be made. Place a small drill in it, about 1/8" or smaller, and you can drill a hole in the smokepipe in a few seconds. Then use a center punch or screwdriver to make the hole large enough for your stack thermometer. If you drill a small hole in the smokepipe to start out, you won't bang out of shape or knock off a smokepipe in making your test hole, as you do sometimes when you attack a tough or old smokepipe with only an ice pick or center punch.

The test hole should be about 12" from the boiler or furnace end of the smokepipe. That is, the stack temperature reading usually is taken about 12" from the smoke outlet of the furnace or boiler. However, air entering the smokepipe through a swinging-disc type of barometric draft regulator must not reach and chill the end of the stack thermometer which is supposed to be bathed by the hottest gases entering the smokepipe.





The CO_2 *reading indicates the quality of combustion. Readings below 8% do not pass. The chemical analyzer, top photo, is a popular model, while some dealers prefer the electrical type shown in the bottom picture.*

There is some slight error in reading attached to this, but you can get an idea of the stack temperature, on an installation where a swinging-disc draft regulator tends to chill the only place in which you can insert your stack thermometer, simply by blocking shut the draft regulator while you take the reading. You can get an accurate reading if, while the draft regulator is tied shut, you reduce the smokepipe draft to normal by using something to block the smokepipe or by opening the clean-out door at the bottom of the chimney flue, if the chimney has such a door.

Use the same smokepipe opening to take readings of the stack temperature, the CO_2 and the smoke outlet or smokepipe draft.

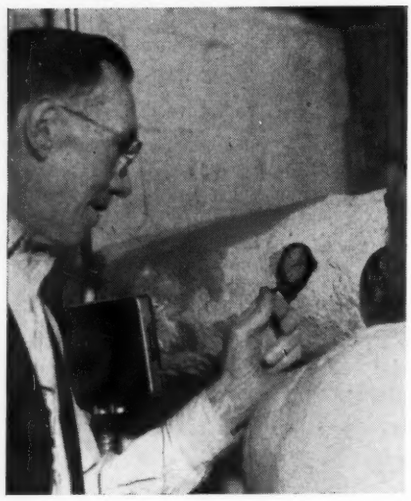
To be especially thorough, take a reading also of the over-fire draft, that is the draft in the space in which the fire burns. On many installations you can do this easily and quickly by opening the firing door or flame observation door just enough to insert the tip of your draft gauge, but occasionally there's no way to get this reading except to drill a hole in a cast-iron or steel door of the furnace or boiler.

Where you can get readings of both the over-fire draft and the smokepipe draft, the over-fire draft reading is the more important. You may want from a "trace" to .02" of negative draft over-fire for your best installations which have practically no air leaks and which give exceptionally clean burning. A trace of draft is defined as definitely a negative draft which moves the needle of a draft gauge, but which is less than .01" or is too low to read on your draft gauge. Thousands of highly efficient installations give no troubles of insufficient draft even while the negative draft over-fire is less than .01". On the other hand, many combustion experts regularly aim for over-fire draft, on typical small domestic installations, of .01" to .02", some of them expressing a decided preference for the higher readings in this range.

Deduct the over-fire draft reading from the smokepipe draft reading to obtain a figure for the draft-drop through the boiler or furnace. The higher the draft-drop, the more difficult is the flow of the products of combustion through the flue passages. A certain furnace, for example, fired at a certain gph rate and giving a certain CO_2 reading, gives readings of .02" negative draft over-fire with .06" negative draft at the smoke outlet. The draft-drop is .04"; to produce zero draft over-fire would take minus .04" smoke outlet draft. For higher firing rates and for lower CO_2 readings, usually the draft-drop increases. Obviously a furnace or boiler of exceptionally high draft-drop requires unusually high chimney draft to prevent plus pressures over-fire, and should not be installed where the chimney gives substandard draft.

When to Take Readings

Service men new at testing often ask when to take the readings. Usually the over-fire and smokepipe draft readings may be taken quickly, after the burner has been running 10 or 15 minutes following a cold start. True, on some installations the draft increases for half an hour to two hours following a cold start. Yet this does not affect the fact



Run the burner *for 15 to 30 minutes and then read the stack temperature. Temperatures above 600° indicate wasted fuel; 400° to 500° is excellent.*

that significant readings can be obtained quickly. After all, usually the equipment is not entirely cold when a service man arrives to test it, and the increases in draft which follow 10 or 15 minutes of burner operation are supposed to be minimized by the automatic draft regulator.

The question of when to read the stack thermometer usually is answered by the advice to read when the thermometer stops giving higher numbers. When it won't go any higher, read it.

That is good advice for the laboratory, but cannot be followed literally on actual installations without taking much time, since on some jobs it takes an hour or two of burner operation, following a start which is cold or nearly cold, to bring the thermometer to its peak reading. Running the burner in one hot water heating system for one hour gave a stack temperature reading of 470°, for example, and an additional hour of steady burner operation brought the reading up to 483°.

To be sensible, run a burner about 15 to 30 minutes (15 minutes if the heating plant was warm when you arrived to test it; 30 minutes if you found it stone cold), then insert your stack thermometer in the test hole of the smokepipe, wait no more than five minutes, and take the stack temperature reading. True, if you waited an hour or two you would get a higher reading on many installations. But asking a service man to take an hour or two in getting stack temperature readings on actual installations is outside the realm of reason. Few installations would be tested if the procedure took hours. The readings obtained in reasonable time are signficant; they are comparable when taken on approximately the same time basis. From these readings, an expert can judge which readings would be obtained by bringing the heating plant to its maximum temperature.

The accompanying stack loss table is based on complete combustion of domestic fueloil (no chimney smoke, and no escape of oil vapor from the firebox) and permits estimating the stack loss after the CO_2 and stack temperature readings have been obtained. For example, if the readings are 10% CO_2 and 600° stack temperature, find 10 in the lefthand column which is headed % CO_2, then look towards the right as far as the column headed 600° stack temperature. The loss is 21.1%. This is in terms of total heat in the fueloil.

The "absorption efficiency" of an installation may be estimated, on a basis of assuming complete combustion and continuous operation of the burner, by deducting the stack loss figure obtained from the table from 100%. That is, if the stack loss is 24%, then the furnace or boiler absorbs 76% of the heat in the oil. Absorption efficiency figures obtained in this way should not be confused with figures representing efficiencies based on other methods for checking equipment. The figure for overall efficiency, which properly is obtained by checking the Btu input and Btu output of a furnace or boiler, is, for example, something quite different from the absorption efficiency figure.

Many equipment dealers who take seriously their responsibility towards purchasers of their equipment make complete tests, of the type described here, at the time a burner is first started or during the first week or two it is used, and repeat the tests sometime during the first year.

The standards for interpreting the test readings are:

1. Draft Test: Aim to use the lowest over-fire draft which gives 100% satisfactory burner operation. Some experts regularly tune for a "trace" of over-fire draft (over-fire draft which is definitely negative, but which is too low to give a reading on the draft gauge or which is lower than .01"). Others aim for minus .01" or .02" over-fire draft.

The smokepipe or smoke outlet draft reading is of lesser importance.

Deducting the over-fire draft reading from the smokepipe draft reading gives the draft-drop through the flues of the boiler or furnace.

2. CO_2 Test: The CO_2 test should be made with no smoke coming from the chimney, and with the flame adjusted to give combustion sufficiently complete so that flue passages of the furnace or boiler will not need removal of soot more than once a year. Many installations give combustion so complete that accumulation of soot in the flues is no problem.

For pressure burners, a reading of 8% CO_2 or higher should be obtained. Lower readings indicate intolerably inefficient combustion. Burner dealers truly expert at handling combustion and firebox problems regularly obtain CO_2 readings above 10%, and in some instances even above 12%, on their typical installations.

3. Stack Temperature Test: To be tolerably efficient, an installation must give a stack temperature reading no higher than 600°. Where the equipment dealer installs a new boiler or furnace, his selection of the unit determines the

STACK LOSS TABLE

% CO_2	% Excess Air	Stack Temperature, Degrees Fahrenheit							
		300	400	500	600	700	800	900	1000
15	2	10.6	12.7	14.8	16.9	19.0	21.1	23.2	25.3
14	7	10.9	13.1	15.3	17.5	19.7	21.9	24.1	26.3
13	15	11.3	13.6	15.9	18.2	20.5	22.8	25.1	27.4
12	25	11.7	14.1	16.5	18.9	21.3	23.7	26.1	28.5
11	35	12.0	14.6	17.3	19.9	22.5	25.2	27.8	30.5
10	48	12.4	15.3	18.2	21.1	24.0	26.9	29.8	32.7
9	63	13.0	16.2	19.4	22.6	25.8	29.0	32.2	35.4
8	81	13.8	17.2	20.6	24.0	27.4	30.8	34.2	37.6
7	107	14.9	18.8	22.7	26.6	30.5	34.4	38.3	42.2
6	142	16.2	20.8	25.3	29.9	34.4	39.0	43.5	48.1
5	180	17.7	23.0	28.3	33.6	38.9	44.2	49.5	54.8
4	218	19.9	26.4	32.9	39.4	45.9	52.4	58.9	65.4

stack temperature, and he bears the responsibility of providing a furnace or boiler which, when fired hard enough to carry its load, will give a stack temperature no higher than 600°. Stack temperatures in the 400° to 500° range often are obtained from new boilers and furnaces designed for oil.

It is true that the answers obtained from the type of table which accompanies this article are only approximations; tables and graphs which give stack losses and absorption efficiencies keyed to CO_2 and stack temperature readings are only rough guides to actual efficiencies. It is equally true, however, that at a certain stack temperature the efficiency is higher at 12% CO_2 than at 4% CO_2; and it is true that at a certain CO_2 percentage the efficiency is higher at 500° stack temperature than at 1000°. Well-educated burner men therefore use instruments to tune and check their burner installations, and often aim for the stack temperature and CO_2 readings which jibe on a chart or table with stack losses lower than 20%. Stack losses lower than 15%, on the same basis, are found on many modern installations which include furnaces and boilers designed for oil.

Major Company Speakers See Heating Oil Up 8-10%

J. L. MINNER, national fueloil manager for Shell Oil Co., Inc., New York, and Gordon Donald, division manager, Esso Standard Oil Co., in talks before the Fueloil Distributors Assn. of New Jersey, forecast an increased distillate fuel supply for next heating season of 8 to 10% over last season.

The convention, largest in the group's history with over 500 registrations, was held at Asbury Park on April 29 and 30. Chas. H. Bruett is president and A. W. Rich executive secretary of the Assn.

Minner's talk was primarily on what the industry is doing to meet increased demands, in which he disclosed the steel supply problems and the capital problems of the industry as a whole. He pointed out that in spite of record earnings, they were not yet high enough to provide the needed funds for expansion at a rate to meet the public's needs, and that as a result the larger oil companies are forced to borrow heavily to carry forward their programs.

In discussing the forward supply position, Minner quoted sections of the recent report of the Subcommittee on Short Term Availability of the National Oil Policy Committee of A.P.I., commonly known as the "Page" report, since Howard W. Page was chairman.

This short term report is not based on the calendar year, as are most, but rather on the 12 months from April 1, 1948 to March 31, 1949, a period that includes the stock building and peak consuming months for next heating season. The report forecast an 8% increase in all products available for the domestic markets, but believes we should work on the basis of a four to five per cent rise, since some products must go into building up stocks to better working levels.

Minner believes that the stock build-up allowance of the Page report is overgenerous, greater than needed, and pointed out that consumers should not be denied oil heat to provide for an unnecessarily large build-up.

He further explained that under present refining techniques supplies of lighter products will increase more than will supplies of residual fuels, which led him to conclude that distillate fueloil demand could be taken care of at a rate of eight or nine per cent over the past season.

Minner did make clear, however, that all such figures are on a national basis, and could not be equally applied to every company or every market. He emphasized that each marketer can be safe only by depending upon his own supplier to tell him how much growth he can take. He further stated that while most suppliers had not yet told their distributors how far they could go, this was primarily because military needs by companies were still a bit foggy, but should soon be cleared, at which time accurate plans can be made.

He then urged that in selling new burners this year particular emphasis be put on new home business and replacements . . . let the conversions from coal wait for more favorable conditions.

Donald, the other major company forecaster, first reviewed the history of how the oil industry got into its tight position, recalled that he had warned of troubles when he addressed the group a year ago, and then made the point that if every oilheating user had burned only 20 gallons less during the past season and if every motorist had consumed only a half gallon per month less in 1947, there would have been no shortage of any kind.

After giving seven reasons why Esso is not going to increase its direct business for the 1948-49 season; and nine reasons why it is almost impossible to predict future supplies, Donald nonetheless did say that he believes the oil industry will have available about 10% more fueloil.

W. A. Matheson, head of Oil-O-Matic, emphasized the fact that oilburner men and companies cannot remain static in a period like this . . . that any product either flourishes or fades. He criticized the "Don't" approach of certain oil men, which he feels has no concern for the future of either the equipment people or the oil industry itself. While congratulating the oil industry as a whole for its broad gauge viewpoint, Matheson pointed to exceptions where key men have grown so secure that they have lost their perspective, feeling that they can dictate to the public the uses to which their product will be put.

In a plea for more realistic public statements from oil men, giving to the press as much optimism as they privately display, he warned that public confidence can't be turned on and off like a spigot . . . that loose talk can never be recalled—its destructive effects go on and on.

Fueloil prices should be held up, Matheson feels, because the product must be made as popular with refiners as it clearly is with the public. "Crying down prices," he declared, "is a negative approach; an honest profit needs no apology; the oilheating industry accepts the challenge through engineering to provide more heat per gallon."

R. M. Bartlett, vice-president, Gulf Oil Corp., discussed world-wide demand and transportation problems. He told of the needs of the European Recovery Program for the next year as being 987,000 B/D, of which only 10% will come

from the United States, but 450,000 B/D will come from foreign production of U. S. companies.

Emphasizing the need for European refining facilities, he said that we are now bringing crude from the Near East to this country to be refined and shipped back to Europe.

World crude reserves are 76 billion barrels on the basis of discoveries to date, with 24 billion of this in the U. S. Imports of crude from the Near East to this country will be 30,000 B/D in 1948, 60,000 next year, 150,000 B/D by 1951 and 500,000 B/D by 1955.

Defending the practice of shipping oil industry steel out of the country, Bartlett made the point that a ton of steel gets five times as much foreign oil as in our country. The average American well now pumps 12 barrels a day, the average South American well 250 bbls. and the average Middle East well 4,000 bbls.

Commenting on Government oil activities, Bartlett mentioned that there are now 16 active Government committees having to do with oil industry troubles, including the better known Wolverton, Tobey, Haselton and Wherry Committees, and explained that these resulted from bad industry publicity and bad public relations. He feels that Washington has issued a challenge—take care of farm needs, essential gasoline and fueloil demands, or they'll take over.

Wiley Butler, president of Coastal Oil, spoke on two principal lines: first, that fueloil distributors must increase their own bulk storage to the point where they can take in four summer months at least a fourth of their year's volume, and second, that distributing margins are unrealistic and inadequate.

On the storage question, he pointed up the refiner's position in which he spends large amounts on summer-to-winter storage, and that this is one of the reasons why distillate fuels are not more popular. Marketers have in the past taken only 12 to 13% in the summer, but must get in position to double this, particularly on the East Coast . . . since tankers are not plentiful enough to operate on a peak season basis, but must keep moving all products away from the Gulf refineries as fast as made.

Storage costs money, Butler recalled, and so do many other operating facilities, which calls for more margin. Working capital needs of the distributors are three times what they were prewar, in his opinion, and he further stated that no major company today can deliver heating oils as cheaply as the total gross margin given distributors.

Herbert E. Williams of Minneapolis-Honeywell Regulator Co., in his talk featured the development and advantages of three oilheating controls, the electronic protectorelay, the electronic Moduflow and the Chronotherm. On the latter, he performed a dramatic demonstration of installing a new type in five minutes, and very convincingly urged fueloil men to push these for large fuel savings.

Richard W. Reinhart, manager, Market Research Dept., Socony-Vacuum, New York, explained why people now prefer to buy their fueloil from a distributor rather than a major supplier, and expressed the conviction that this will continue to be the case. He had figures to show that in large cities 75% of burner users buy from distributors, and in small cities it is 81%. This is due, he has learned, primarily to personal relationships that have cemented customer confidence. In surveys made by his company, he learned that 75% of fueloil users never switch suppliers.

Anticipating large oilheating expansion each year, Reinhart disclosed that his analysts expect gas heating to increase only between 6 and 11% a year through 1950.

As to fueloil availability, he does not believe in the oil industry determining what the public is to have, but rather declares that the consumers must decide what products they want, and how much they want them, by economics.

Robert Gray, FUELOIL & OIL HEAT, New York, in the opening discourse of the convention, explained with charts the consumer opinion poll on fueloil questions that is reported in full in this issue.

Cleveland NPA Speakers Proclaim Their Own Oil Needs

THE PRINCIPAL FEATURE of the 45th Annual Meeting of the National Petroleum Assn. at Cleveland on April 22 was a six man forum to evaluate the needs for oil in 1948 and 1949 by types of application. Each participant represented a fuel consuming equipment industry and told what he believes the public needs will be in his direction.

Col. G. H. Vogel of the Armed Services Petroleum Board looked ahead at military requirements. K. W. Anderson, manager of product research, Deere & Co., told about farm equipment, present and future, and how much fuel must be provided to operate it. W. W. Kelly, general purchasing agent, Santa Fe RR, outlined the growth of diesel locomotive demands. Carl Jonswold, Arrow Petroleum Corp., Chicago, took the stand for space heaters. Robert Gray, FUELOIL & OIL HEAT, New York, showed why the public can't very well get along without oilburners, and how many.

Russell E. Singer, executive vice-president, American Automobile Assn., Washington, showed how much more gasoline must be provided for motor cars. After the six members had talked, A. J. McIntosh, economist, Socony-Vacuum Oil Co., New York, pulled together the total needs as outlined and compared them with the prospective supply program of the industry.

Col. Vogel explained that for the fiscal year 1948 (which ends June 30, 1948) the total military requirements for all products has been 125 million barrels. For the fiscal year 1949 the base figure is 120 million barrels, or a slight decline. This base quantity represents 330 thousand barrels a day. Of this, 100,000 B/D will be supplied outside the country, so the 230,000 B/D required from domestic production will represent about 4% of the total crude oil produced.

The Colonel warned, however, that these are base figures and that contemplated increases in the military establishment may run them up as much as 25%, with the bulk of the increase coming in the January-June, 1949 period.

The specific grades of fuels required for the 1949 fiscal year were enumerated as follows:

The Navy special fuel oil figure, the largest single item, is 35 million barrels

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...And provide more comfort

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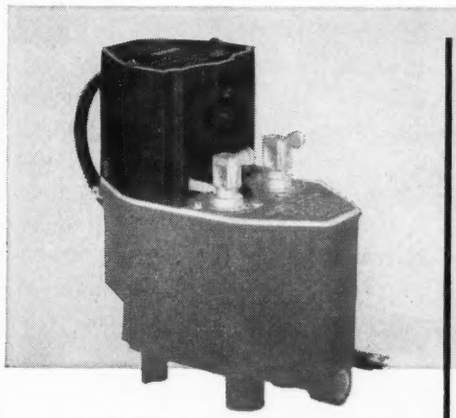
Thousands of home owners who now have manually controlled oil heat are a ripe market for these four "Detroit" products, because they increase comfort and convenience and at the same time save oil.

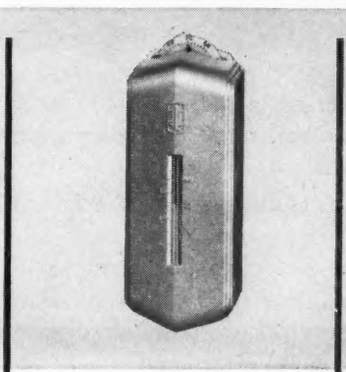
The Add-On Control and Room Thermostat make the heater automatic. The home is far more comfortable and there is a substantial saving of fuel. The Fuel Transfer Pump makes fuel supply automatic, and the Three-Way Valve permits installation of a second tank.

Here is a new, unsaturated market—easy to find, easy to sell. And the equipment is very easy to install. It's profitable, quickly repays the effort you put into it.



"DETROIT" CRC-239-P and CRC-239-PF Add-On Controls

Mount either of these on top of a manual type CRC-239 Float Valve. Connect to lighting circuit, and run two low voltage wires to the "Detroit" No. 411 Room Thermostat. That's all there is to it to make the space heater or floor furnace automatically self-regulating. CRC-239-P is for space heaters—CRC-239-PF for floor furnaces. Built-in transformer.

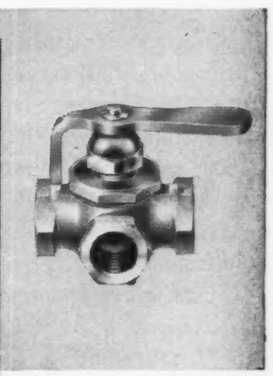


"DETROIT" No. 411 Room Thermostat

Eliminates overheating and consequent fuel waste. Provides accurately leveled temperature control. Combined with the Add-On Control, it saves oil, improves comfort. Space heater and floor furnace owners are waiting for this combination.

"DETROIT" CRC-433 Fuel Transfer Pump

Automatically keeps heater supplied with fuel — no more hand carrying and filling. No spilling, no mess. No attention needed after installation.



"DETROIT" CRC-520 Three Way Valve

Used on dual tank installations. Second tank provides reserve supply and permits buying of oil in more economical quantities. Three positions — left hand tank, right hand tank, and all off. Cast brass body — ⅜" or ½" F.P.T. connections.

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fuel oil & oil heat

as compared with 43 million barrels in fiscal year 1948.

The total aviation gasoline and jet fuel requirement, including all grades, is 25¾ million barrels as compared with a figure of 20 1/3 million barrels in 1948. Of this amount, approximately 15 million barrels represent the requirements for 100/130 aviation gasoline, all of which must contain a minimum of 10% aromatics.

Motor gasoline requirements for fiscal year 1949 are 16½ million barrels of which 150 thousand barrels is arctic grade Morgas for use in the cold climates.

Diesel requirements total approximately 19 million barrels, over two-thirds of which represent Navy Diesel. Incuded in the "other" Diesel is approximately 850 thousand barrels of low pour Diesel for use in the arctic areas.

Lubricating oil requirements appear as approximately 2 million barrels, of which approximately 550 thousand barrels is aviation lubricating oil. Greases will be required in the amount of 22 million pounds, the majority of which will be the regular general purpose chassis type.

Anderson explained that farm needs for gasoline and oils are rising, due first to a 10% increase in population since 1940, and then to the fact that farm labor and draft animal supplies are steadily decreasing, all calling for more mechanized tools. In estimating fuel requirements, he used the following data:

Since wheel and track type tractors are responsible for the majority of the fuel requirements, it is necessary to predict the popularity of these types on farms during the 1948 year. The Bureau of the Census reports as of January 1, 1945, a total of 2,255,000 wheel tractors. Actual sales for farm use in 1945, 1946, and 1947, and estimated sales from November of 1947 through April of 1948 totals 903,000 units. On the negative side we have an estimated disappearance of 168,000 units for the same period which has been held well below the normal rate because of acute shortages. The estimated total of wheel tractors is 2,990,000 units. On the same basis we start with 98,500 of the track type on January 1, 1945, which builds up to a 1948 mid-year total of 128,000 units.

To determine the use of fuel in gallons per hour for wheel tractors a careful analysis was made of Nebraska test data using the varying load average which checks very closely with numerous actual field tests. A balance between the various models within each of the divisions of sizes (under 30 BHP—30 BHP and over) was made on the basis of sales giving a fuel use for the smaller size of 1.51 GPH and 2.38 GPH for the larger units.

On the recommendation of a leading manufacturer, track type tractors, were equally divided between diesel and spark ignition engines. Again Nebraska test data was used to establish fuel use at 1.9 GPH for the diesels and 2.80 GPH for spark ignition engines, as an average for all sizes.

An average annual use of 800 hours for both wheel and track type tractors was established.

Additional tractor useage for miscellaneous jobs has become an increasingly important factor. Hauling, operation of front end loaders, dirt scoops, dozer blades, snow plows, post hole diggers, terracing plows, dusters and sprayers are examples of this type of work.

Sales of garden tracotrs have increased tremendously since the war and it is estimated that 398,000 will be in use in 1948 and at least 500,000 in 1949. However, they have small engines and because of their limited use the annual fuel requirements is estimated at only 8 to 10 million gallons.

Other engine use on farms include (1) the multitude of small units that handle the miscellaneous jobs, (2) large units for operating irrigation pumps, (3) units of 15 to 60 BHP to operate combines, forage harvesters, balers, mills, and dryers. Data on fuel use by this equipment is difficult to procure but a reliable concern closely affiliated with the petroleum industry makes an estimate of 250 million gallons for what they term small engines, which is roughly 6 per cent of the total.

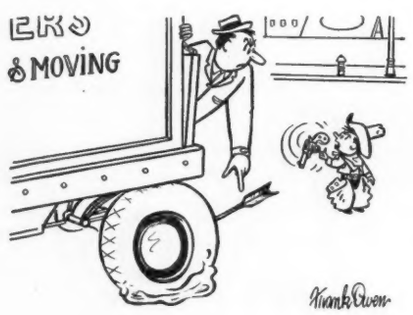
Kelly, speaking for diesels, explained that they should be considered on the basis of "units," rather than locomotives, since the motive power for a train would be made up of from one to four units. In 1940 there were 967 units in operation; on December 31, 1946 there were 5,000; on December 31, 1947 there were 6,100, and by 1954 the industry expects to have 10,000 in operation. February of this year was a peak month, with 159 units added to the rails. The maximum possible increase annually is 1,800.

Fuel consumption by diesel units on railroads in 1940 was 61 million gallons; in 1946 it was 514 million gallons; then 719 million gallons were used in 1947, and the rise in 1948 is expected to about equal that of last year. This would show a 28.5% increase over 1947.

Jonswold looks for a space heater growth, in total number operating, of around 650,000 in 1948. Pertinent calculations from his paper include these:

In 1939, there were 1,220,243 space heaters in the United States. During 1940 and 1941, it is estimated that 500,000 new units were added in each of these years. In 1942, we added 96,000 units. In 1943, 46,800 units, in 1944, 126,825 units, in 1945, 360,607 units. It is estimated, after allowing for replacements, that there were 2,500,000 stoves in operation as of December 31, 1945, plus about 200,000 hot water heaters and furnaces.

Sales of stoves totaled 1,006,174 in 1946 and 1,985,781 in 1947—which is almost four times 1941 sales. This means there were approximately 5,500,000 stoves in use at the end of 1947 or more than twice as many as were in use at the



"It wasn't me. I'm a six-gun man myself!"

"I hope I don't catch cold – Mr. Hendricks has been sneezing in my ear all morning!"

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end of the war and over four times the number in use in 1939.

Sales of hot water heaters totaled 250,701 in 1946 and 281,472 in 1947.

Sales of furnaces are estimated at 40,645 for 1946 and 184,535 for 1947. These furnaces may either be hung from the floor with a single hot air outlet or may be used as central heating plants with regular hot air ducts. These units are new comers—very few were sold prior to 1946.

It is estimated that 85,000 pot type conversion burners were sold for installation in coal burning central heating plants in 1947.

Total sales in 1947 of all these vaporizing units were 2,536,788 and at the end of 1947, there were over 6,500,000 vaporizing units in use.

For purposes of estimating the fuel required by units which will be sold in 1948, it will be well to consider the demand by classes of units. Stoves were originally sold in the metropolitan areas of the North, but the trend of demand in the South has been very strong. The fuel demand is now estimated at 650 gallons annually per stove. It is estimated that hot water heaters use 300 gallons annually. Furnace and conversion burners are estimated to use 850 gallons annually per unit.

In October, 1947, the manufacturers had a back-log of orders totaling almost 1,800,000 units. This has been all but cancelled. The manufacturer is seeking orders and cannot get them. Three months' production has been lost in 1948 and it is not anticipated that production will step up very rapidly during the next three months. Manufacturers are trying to secure orders with the understanding that those dealers who cooperate now will be taken care of next fall which is the period of heavy demand. It is believed that the Industry will have to do a good selling job to sell 700,000 stoves plus a possible replacement sale of 200,000. It is questionable whether half of this replaced equipment actually goes out of use.

Sales of hot water units are estimated at 125,000 which is about one-half of 1947 sales. Some manufacturers will regard this as a very optimistic estimate in view of shipments in December, 1947, which were about 1/3 of 1946 and early shipments in 1948 which were worse.

It is felt the Industry will sell 100,000 furnaces in 1948. This is slightly more than one-half of 1947.

Conversion burner sales will probably not exceed 25,000 units this year which is less than 1/3 of last year.

Totaling these forecasts, results in a figure of 950,000 new users plus 200,000 replacements, as compared to 2,536,788 in 1947. This represents an increase in fuel demand of 15% over 1947. This does not take into consideration the demand created by equipment sold in the latter part of '47, which did not actually begin to use products until '48. Nor does it take into consideration fluctuations in weather, and also the unknown quantity of equipment in hands of dealers at the end of 1947. It is estimated that from 300,000 to 400,000 units were in the hands of dealers as of that date, but are included in figures previously quoted, because we can only obtain manufacturers' figures.

Gray, speaking for central heating oil-burners, explained that it would be best to plan for 450,000 new installations in 1948, for a rise in distillate heating oil

demand of 15.5%, followed by another increase in 1949 of 10.2%. He recognized that sales are very few at present, but believes that with general publicity on oil supply swinging into a more constructive direction, considerable public confidence will be restored. Pertinent paragraphs follow:

The enthusiasm for oilheating as a part of better living is so well entrenched and deep-rooted that almost no family, having tried it, will ever go back to coal. As the children of these modern families, particularly the G.I.'s, get into homes of their own, they won't have anything to do with coal. An indication of how people cling to an improved form of living, once they've tried it, is the fact that during the depression of the '30's no one took out his oilburner to go back to a cheaper fuel.

To arrive at demand estimates, it is not only necessary to assume a certain number of installations in future periods but also to calculate the average consumption per burner under so-called normal conditions. We have a record of the average consumption for each burner (that is, each central heating distillate burner) during the heating season of 1946-7. After adjusting this for weather variations from normal, we arrive at an average consumption figure of 51.23 barrels per burner. It is important to notice that this is based, not only on the strictly residential installation, but it also includes small stores, small apartments, garages and the like, where a similar type of burner and fuel are used.

Then there is another important adjustment to make. During this past heating season, the consumers voluntarily reduced their fueloil consumption at a rate of about 9% compared to their earlier habits. This can easily be determined by checking the automatic delivery cards, as was done by a lot of companies. They saved this oil for three reasons: (1) they were afraid they might run out; (2) the price was getting too steep; (3) they were willing to share with their neighbors. Most industry men feel that high price was the biggest influence in the saving, so I am assuming that we will get that saving during the next two years, especially since there will be more educational work on conservation each winter.

After adjusting, then, for weather and for consumer habits during the various affected periods, we find average consumption per burner to have been about 46 barrels in the calendar year 1946; it was 50 barrels in 1947, then we estimate 49 barrels in 1948 and 47 barrels in 1949. That last figure, the one for 1949, in which we can only assume normal weather, becomes the new average consumption figure during the period of high prices and the resulting consumer savings. The table that follows is based on the average number of burners in use during a calendar year:

(*Continued on page 86*)

Year	*Average Number Burners in Use*	*Barrels Per Burner*	*Total Demand In Barrels*	*% Rise*
1947	3,235,522	50.32	162,811,467	...
1948	3,875,000	48.52	188,015,000	15.5
1949	4,400,000	47.08	207,152,000	10.2

The 1949 demand figure is based upon the assumption of 600,000 burners being installed for new oil users during that year.

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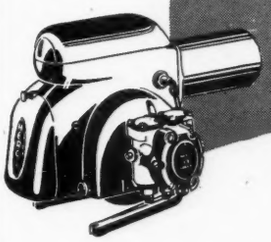

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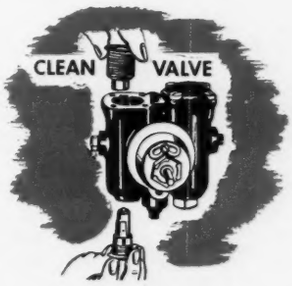

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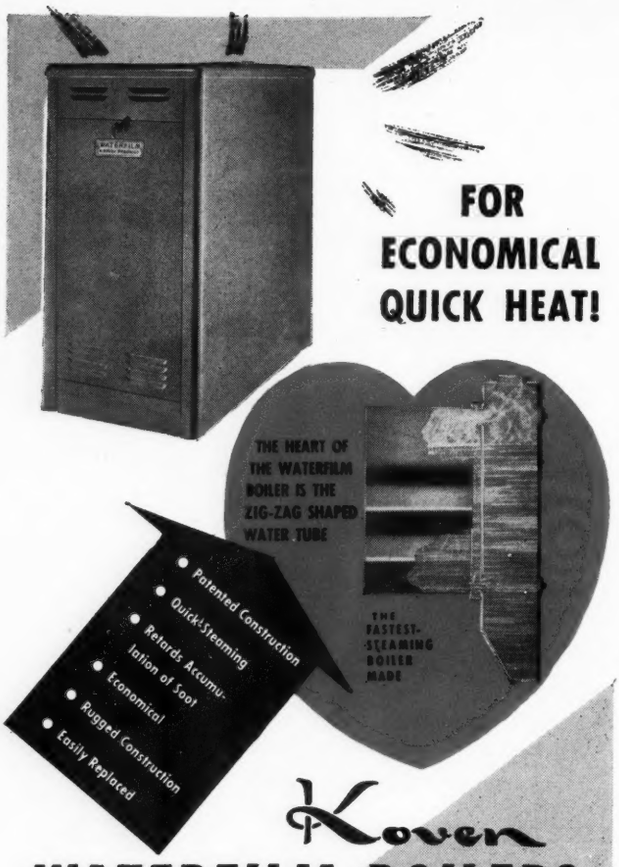

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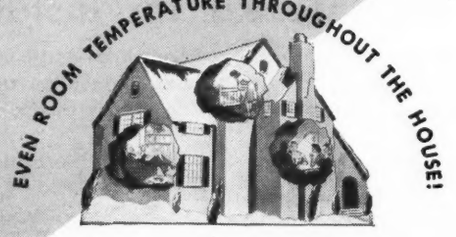

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For the longer range outlook, it is well to remember that gas will eventually be back and take much of the new home market, for the same reasons that it did before. It is reasonable, then, to expect burner sales to new oil users to run somewhere between 500 and 600 thousand a year. This would bring us to the point of having supplied burners to the 7½ million families that have said they want them, by the end of 1955.

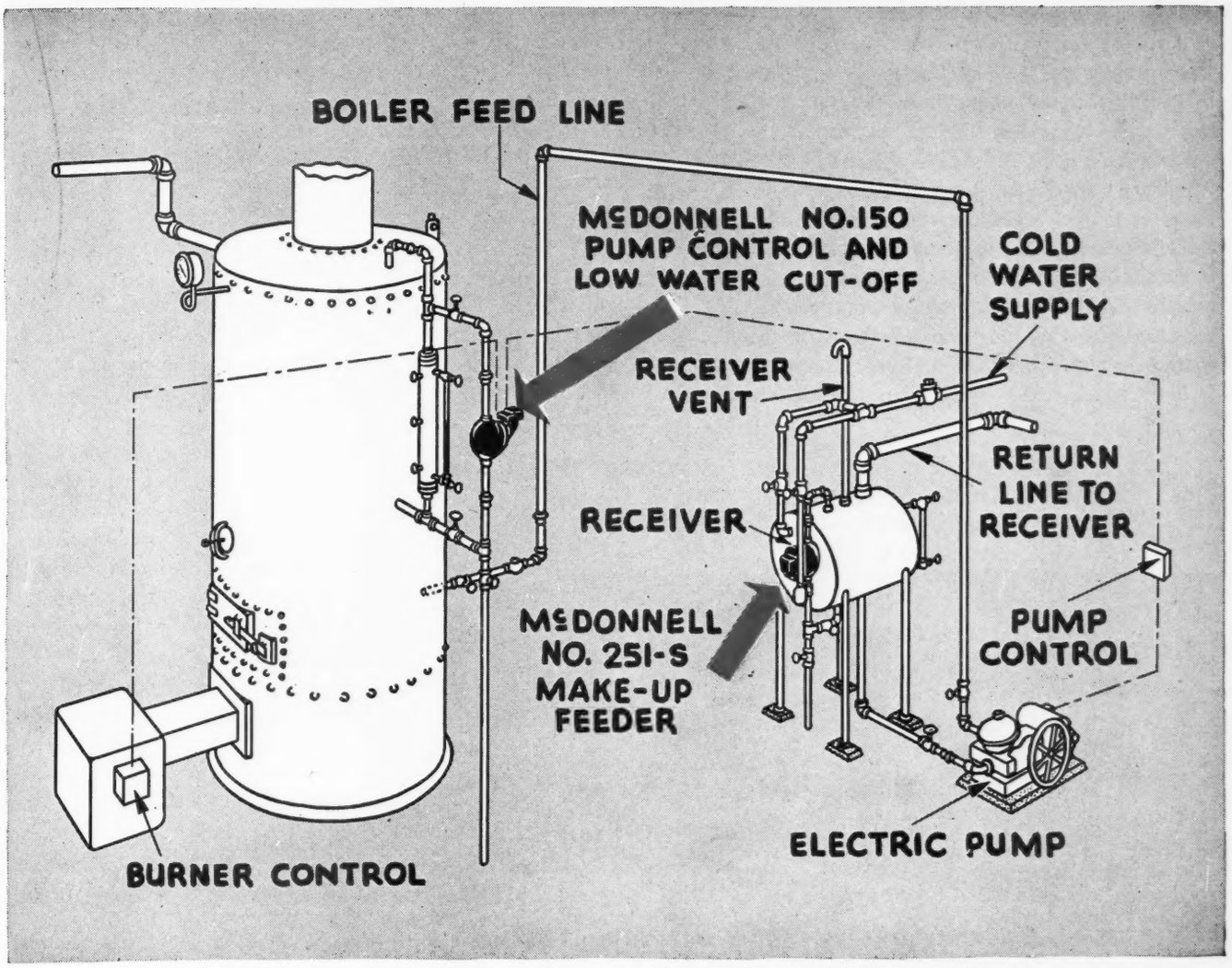
Looking back, the number of oilburners in use was doubled in the eight years ending with 1947, in spite of the fact that several of those were war years when new installations were suspended. Before the war, going back to the early days of oilheating, the number doubled every five to six years. Now it would appear that we will about double the present number in seven years. It would be helpful if you could keep this figure in mind as you plan changes and enlargements in refinery equipment.

Singer, speaking for automobiles, said that the average number of passenger cars in use in 1947 was 29,322,000, that it will be about 31,500,000 in 1948 and 34,000,000 in 1949. Other interesting portions of the talk showed, for example, that the auto industry objects to optimistic statements on fuel supply because they make it impossible to get car owners to drive slower or otherwise conserve gasoline.

He mentioned that the average mileage per car in 1941 was 9,285 and in 1947 was slightly over 10,000, with fuel consumption at 15 miles per gallon average. He estimated that gasoline needs will be 45.8% of crude runs in 1948, and 46.3% in 1949, compared with 45.3% in 1947.

McIntosh, the moderator, then took all of the requirements for 1948 and 1949 as indicated by the six pleaders, showed that they tote up to a 12% overall rise in demand, and that there will be not more than 8% additional product to meet it. Typical paragraphs were:

If we have about 6½% more total petroleum products for the use of industries and the civilian population, it is probable that the increase could be somewhat larger for gasoline and middle distillates. This is on the theory that improvements in refinery techniques and facilities in recent years have been towards greater yields of light products at the expense



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Fuelfoil & oil heat

of residuals. It may be that there will be no more residual fueloil than there was available in 1947, or there might be a slight increase of less than 2%. If this comes about, then the increase for light products could be between 8% and 9%. That is for the entire calendar year. As we all know, the consumption during the first quarter of 1948 was somewhat larger than normal due to extremely cold weather. This is past, the consumption has taken place, we must recognize that in thinking about the balance of the year. It looks to me that for the balance of 1948 the most we can expect to have in the way of gasoline and light products is about 8% more than we had in 1947. We think the gasoline increase might be slightly below that, or say 7%. If that were true, then the middle distillates for the balance of this year would be available to the extent of around 10% to 11% over last year.

(MILLIONS OF BBLS. YEARLY)	1947	1948		1949	
Item	*Requirements*	*Requirements*	*% Change from 1947*	*Requirements*	*% Change from 1948*
Stoves, heaters, furnaces	77.8	105.5	35.7%	133.0*	26.0%
Gasoline**	840.0	918.0	9.3	967.0	5.3
Oilburners	162.8	188.0	15.5	207.2	10.2
Tractors	89.5*	98.5	10.1	108.3	9.9
Total	1,170.1	1,310.0	12.0%	1,415.5	8.0%

*Estimated in accordance with trends supplied for other years.
**This apparently includes gasoline for export.

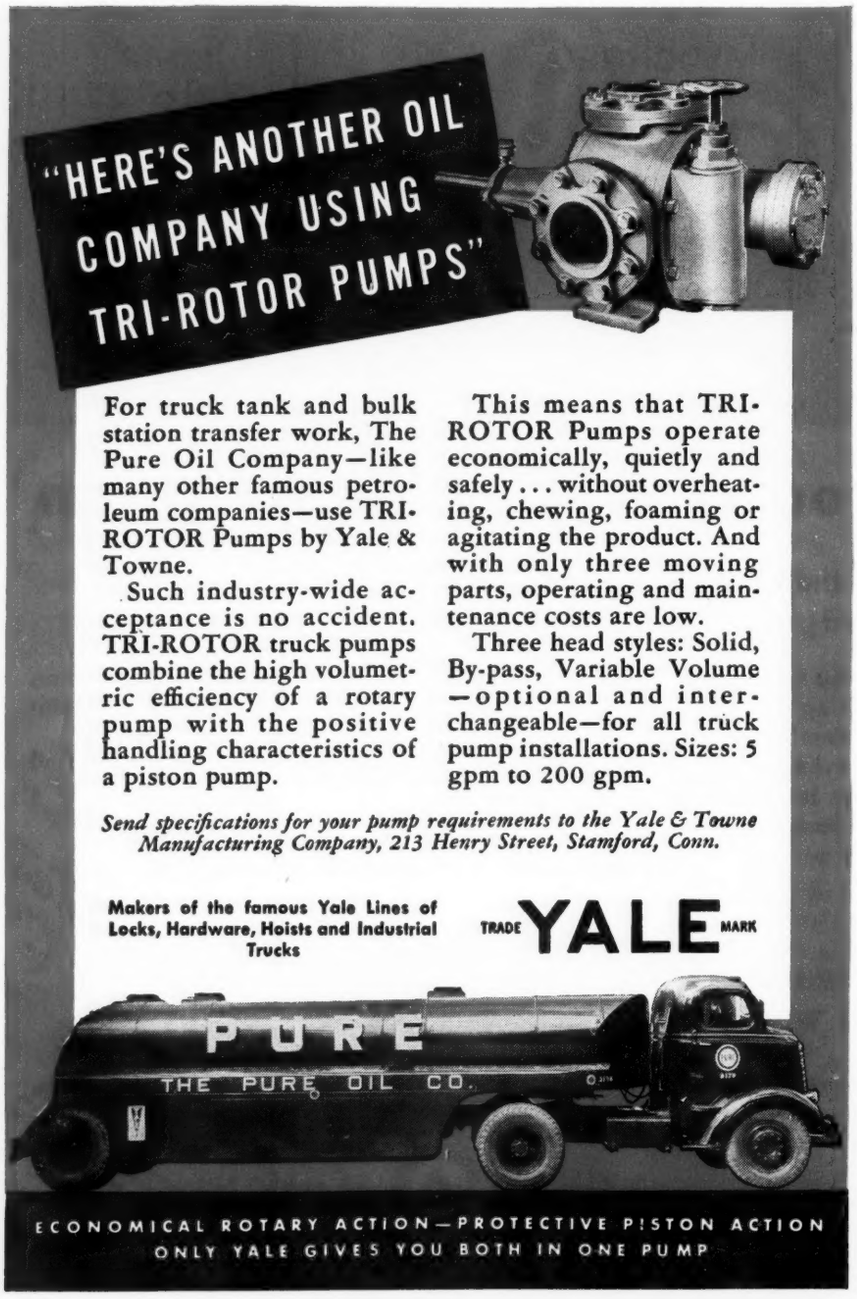
For 1949 we would say that it would be proper at this time to be thinking of supply increases somewhat lower in each category than mentioned above for 1948.

Now let's look at what the various people who have spoken previously on this program think about requirements. These speeches were sent to me and I have set them down here about how they would stack up when converted to barrels of oil.

From the above, it can be seen that the 12% increase in demand for gasoline and the middle distillate oils is considerably above the increase in supplies which was stated at 8%-9% for the entire year.

I am in no position to indicate which class of users should get the available oil. It would take someone with more than a Solomon's wisdom to make the decision on that score, but I think we must all agree that it is absolutely essential that the petroleum industry advise the users of petroleum what the situation is.

There is one other thought which comes to my mind in connection with our discussions and that is that it takes a lot more steel, barrel for barrel, to produce, transport, refine and deliver oil to a home, garage or factory, than it does to produce many of the consuming units which use these barrels. As near as we can calculate, it may take as much as ten times as much steel in the oil industry to produce the oil as it does in some of the equivalent industries to make devices to consume the oil. This is something for us to think about because it may be that with the great facility we have for creating oil using devices which help the consumers and industries to enjoy the great benefits of petroleum with relatively small expenditures of materials, that we are overlooking the other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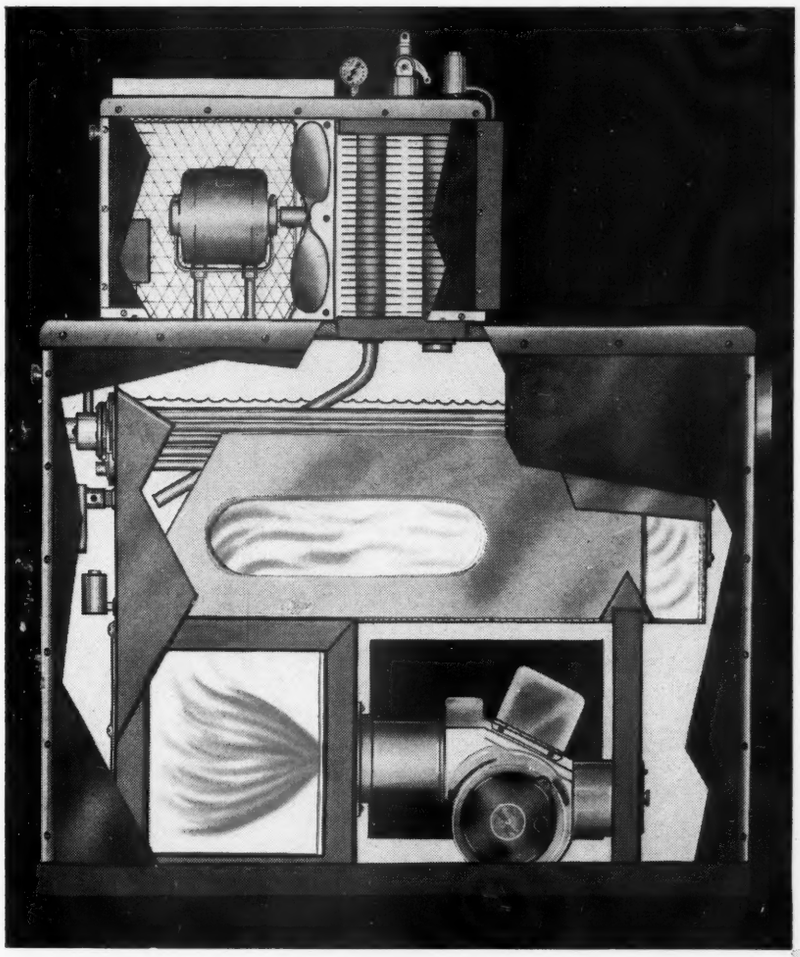

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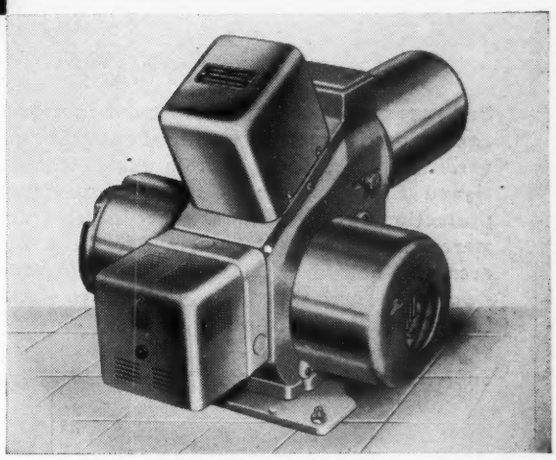
(6) Finished in lustrous aqua blue. Durable composition jacket eliminates any vibration. Send immediately for literature and prices. Mail the coupon below—TODAY.



Above is the New Carter conversion burner—Model CA, one of 3 models. Equipped with: 1—new "Turbo-twin" principle—employs primary and secondary charges of air for highest possible efficiency . . . 2—Electronic control, for super-safety . . . 3—Quick, easy-service. Any component may be removed in less than 2 minutes by unskilled hands.

CARTER CRAFT Corporation
HI-THERM UNITS

THOMPSONVILLE, CONN.

Manufacturers of Precision Gas and Oil Heating Equipment.

CARTER CRAFT CORP.
Thompsonville, Conn.
Gentlemen:—
Please send me information regarding a Carter Craft Franchise.
Name .....
Street ..... **State** .....
City .....

fueloil & oil heat

side which is that it takes so much more material and a much greater expenditure of time and capital to produce and get comparable added supplies of petroleum. I do not know what the answer is, but I do have a pretty good idea of the problem. Some place we will have to strike a balance.

In the question and answer period that followed the papers, McIntosh agreed with the statement by Roy Fox, another Socony man, at the Empire State meeting in New York, the same week, that the oil industry can apparently accommodate an additional 350,000 oilburners in 1948, providing everything is done to conserve oil in existing burners and that a fair number of replacements are sold to replace wasteful old models.

Wilson Committee Sees Eight Percent More Oil

IN A REPORT OF THE Voluntary Petroleum Allocation Agreements Committee of the National Petroleum Council, Dr. Robert E. Wilson, Chairman of the Committee and Chairman of the Board of Standard Oil Company of Indiana, estimates that domestic availability of total petroleum products in 1948 will be around eight percent higher than in 1947. The statement was made at the NPC meeting in Washington on April 15.

Dr. Wilson further explained that whether or not this eight percent increase will bring a comfortable situation depends largely on the number of additional fueloil consuming units put into service during the coming year; he emphasized that the industry will not be able to take care of anything like as large an increase in such units as took place last year. Speaking of the oil industry's immediate problem, that of gasoline supply, Wilson pointed out that gasoline stocks on April 3 were a new high record, 6.1% above the corresponding date of 1947. Crude runs to stills for the past two weeks had been approximately 12.3% above last year, and gasoline production during the period had been 10% above a year ago.

At the same time, gasoline consumption appears to have been running somewhat below that 10% figure, as compared to a year ago. All these factors indicate that the overall gasoline outlook is considerably better than that for heating oil three months ago, in Wilson's view. Wilson advocated that a permanent industry program be carried out under Public Law 395, commonly known as the Taft Voluntary Agreements Act, and that committees be set up in each area to handle the numerous problems current in a tight supply period. He recommended that the program should be administered through the National Petroleum Council.

Rathbone Sees 1948 Demands Fully Met

IN AN ADDRESS BEFORE the Independent Oil Men's Association of N. E., on April 14, M. J. Rathbone, President of Esso Standard Oil Co., expressed the view that 1948 demands for overall petroleum products can be satisfactorily provided. Taking into account an estimated decline in exports for year of 15.1%, Rathbone stated that there will be a total overall increase in domestic demand of 5.6%; increase in supply he estimates at

MORE FILTER AREA with

EDCO Fuel Oil Filter

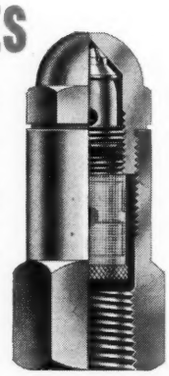
S-252

Sell your customers this inexpensive insurance against costly interruption of service. The exceedingly large filter area in the newly designed EDCO Filter S-252 gives maximum protection to oil burners, space heaters and water heaters using No. 1, 2 or 3 fuel oils. In addition to more filter area, this new filter features *longer cartridge life, sturdy construction, large sump.* It's light in weight to reduce shipping costs and is interchangeable with other makes.

Individually boxed, 24 and 48 to a case.

EDCO Triple-Tested NOZZLES

tops in QUALITY, UNIFORMITY, PERFORMANCE



When you want the best, specify EDCO NOZZLES. They are made of the best grade stainless steel, tested for spray angle, atomization and actual rated capacity, and designed to stay clean longer. Large capacity Monel strainers protect the orifice and slots from plugging.

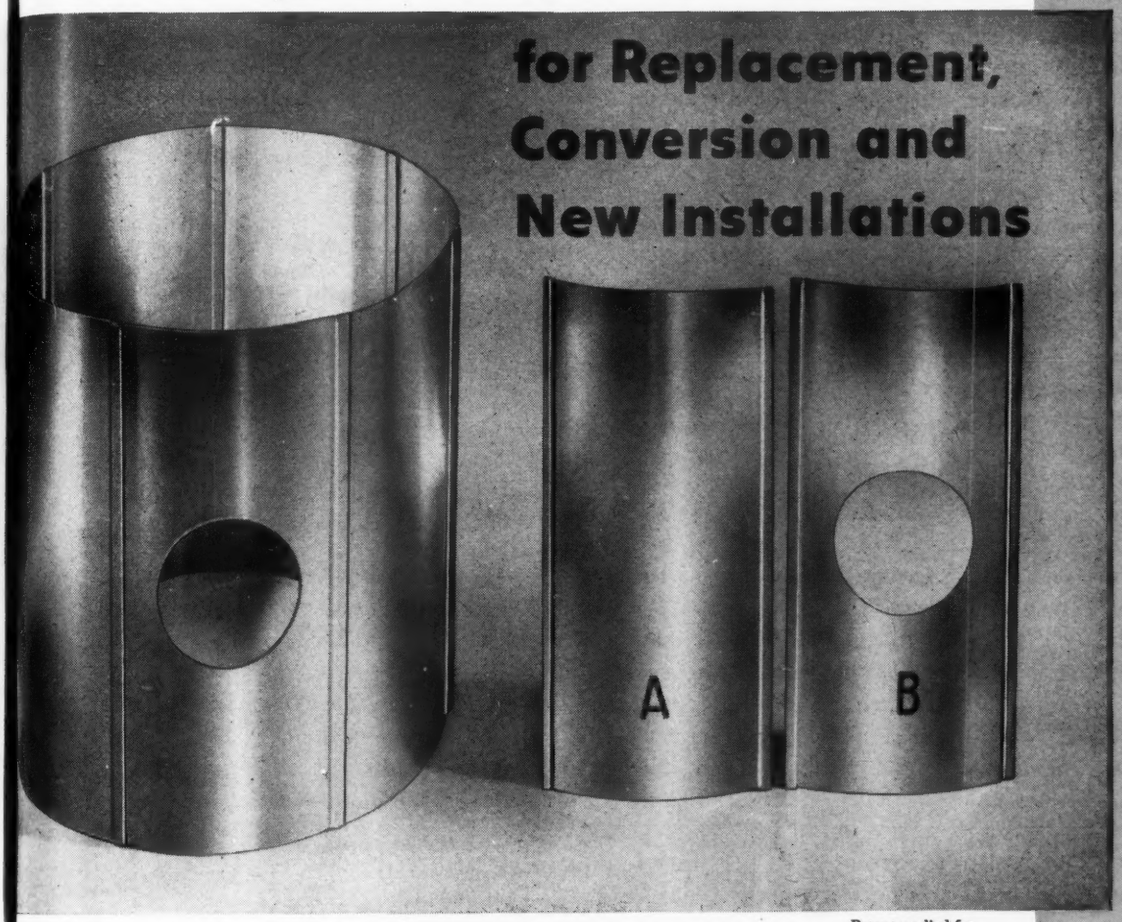
EDCO NOZZLES are now packaged for safety, convenience and storage. Keep an adequate supply on hand. . . . Order today.

Please give complete information about capacity, spray angle, quantity, etc.

EDDINGTON METAL SPECIALTY CO.

P. O. BOX K, EDDINGTON, PENNA.

3-Way Profit Maker



Patent applied for

HEAT-RESISTANT STAINLESS STEEL PANELOX (Trade Mark Reg.) COMBUSTION CHAMBER FOR OIL BURNERS

ASSEMBLED IN 5 MINUTES OR LESS!

Hottest idea in many a year, the heat-resistant stainless steel PANELOX Chamber is a sure-fire seller—sure to make money for you.

QUICK AND EASY TO INSTALL! Actual assembly of the PANELOX itself takes only 5 minutes or less. Installation is simple. *No Cementing. No Backfill. No Insulation.* Just slide the interlocking panels together inside the furnace. Easily fit to any size or shape firebox. So simple—so little time required—you can complete several installations a day for volume profits.

EASILY SOLD! Right now—while oil burner owners still remember last winter's fuel shortage—is the time to cash in on PANELOX. This sensational chamber *heats up in seconds* for more efficient combustion. Saves fuel, cuts down starting roar, reduces smoke, soot and oily film due to improper combustion. Provides for better room temperature control by eliminating override.

Every oil burner owner *wants* these advantages. So your PANELOX market is made to order. If you *tell*'em—you'll *sell*'em. So tell 'em about PANELOX—the 3-way profit maker.

Write, wire or phone for full details and prices

STEFCO STEEL COMPANY

Heating Equipment Division • Michigan City, Indiana

Light in weight—easy to handle—no breakage in shipment, handling or installation.

Interlocking seams prevent warping—adds rigidity and structural strength.

Heat-resistant stainless steel. Highest in chromium content—withstands extreme temperatures.

No Backfill! No Cementing! No Tools! Speeds up every job—cuts labor cost way down.

Low Inventory—no need to stock several sizes. The two types of panels make any size or shape chamber. Light weight means exceptionally low shipping cost.

7.6%, so it appears that the stringency will be definitely eased.

Included in the estimated rise of demand for 1948 over 1947 is a 12% gain for kerosene and distillate fuels. Much of the new refining equipment being built is designed for the purpose of providing larger relative amounts of distillate fuels and Rathbone's estimates for the year are based on some of the current construction being completed. He further pointed out that residual fuel will continue to present a serious problem as industry yields of gasoline and distillate fuels are increased at the expense of heavy fuel, and he expressed the view that no distributor of residuals should count on getting any more of this product in 1948, than he had in 1947.

In conclusion, Rathbone pointed out that while he expected there may be some tight spots here and there throughout the next year, in connection with both gasoline and fueloils, he does not expect these to be in any serious proportions.

Other speakers at the two-day session were Fred W. Heaney, Vice President of Buckley & Scott Utilities, Director of the Oil Heat Institute, and Secretary-Treasurer of the Massachusetts Oil Heating Association, who discussed "Running a Service Department for Profit and Goodwill"; Kenneth G. Mackay, Assistant Credit Manager, Gulf Oil Corp., whose topic was "Effective Management for Fueloil Distributors"; F. B. Hufnagel, Jr., Assistant Coordinator, Sun Oil Company, who talked on trucking problems. Also, Dr. Allen A. Stockdale of the National Association of Manufacturers, and Senator Charles W. Tobey, from New Hampshire.

◈

Some Military Oil Supply Greater Than Requirements

MILITARY REQUIREMENTS for petroleum products during the last half of this fiscal year are short of the actual offerings, in spite of shortages in supply for civilian needs. Kerosene, Navy diesel and residual offerings are still short of the requirements, but "Other Diesel and Burner Oils," Navy Special Fueloil and "Other Heavy Fueloils" all have been offered in volumes greater than needed.

Offerings of kerosene are only 62.7% of the last half requirements of 706,000 barrels. Navy diesel requirements of 8,698,000 barrels for the period are short nearly 10%, and the 2,812,000 barrels of "Other heavy fueloil" offered is only 59.1% of the requirements.

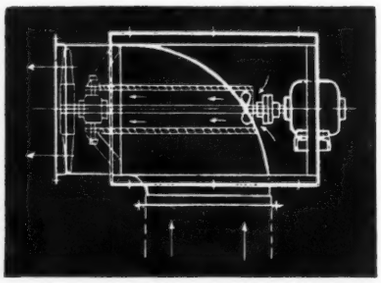
Diesel and burner oils (other than Navy Diesel) have been offered up to 1,117,000 barrels, which is 118.5% of the requirements. Offerings of Navy Special Fueloil are 16,974,000 barrels, or 106.7% of military requirements for the January-June period. Aviation gasoline also has been offered in greater volume than required.

◈

Elliott-Lewis Guarantees Oil to New Burner Users

GUARANTEED OIL SUPPLY for purchasers of new oilheating equipment has been announced by Elliott-Lewis Corp., Philadelphia, in newspaper advertisements. In what probably is the earliest pre-winter announcement on record, the company is assuring local prospects that oilheating is no gamble. (*Cont. p. 94*)

Positive Draft REGARDLESS OF WEATHER OR SIZE OF CHIMNEY



Cross-Section of Wing Draft Inducer. Note how shaft, bearings, etc. are protected from hot gases and cooled by outside air.

CAUSES OF POOR DRAFT

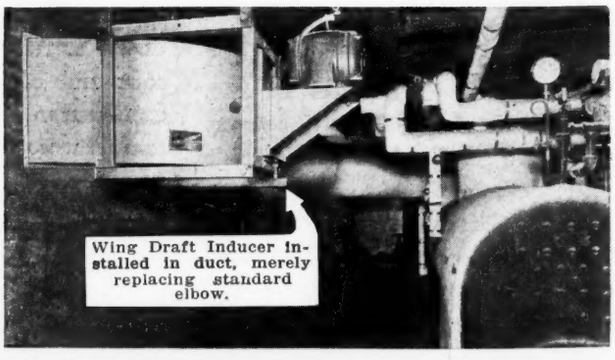
1. Chimney top too low to create the required "pull" in the furnace.
2. Chimney diameter too small, creating restriction in gas flow.
3. Complicated breeching — too long, with too many elbows or restricted areas.
4. High surrounding structures "blanketing" chimney's draw causing "down drafts."
5. Variable weather (such as "muggy" days or when the wind is in the wrong direction, etc.).

Smoke, soot, obnoxious gases and even furnace gas explosions are some of the effects of poor draft in addition to the uneven, irregular heat and incomplete combustion of fuel. If you make the installation you get the blame, so it is wiser to make sure of adequate draft *first*. The Wing Draft Inducer, for moderate size steam plants, industrial furnaces, kilns, etc. is the complete answer to the problem of inadequate draft. Installed in breeching or flue, or in weatherproof housing on top of the chimney, the Wing Draft Inducer will maintain an even constant suction, and produce the required air supply for complete combustion. Make all your jobs 100% satisfactory by insuring positive draft with Wing Draft Inducers.

Write for Bulletin I-10

L. J. WING MFG. CO.
154 W. 14th St., Dept. FOD
New York 11, N. Y.
Factories: Newark, N. J., Montreal, Canada

Wing Draft Inducer installed in elbow of breeching. Operates automatically with oil burner.



Wing Draft Inducer installed in duct, merely replacing standard elbow.

WING DRAFT INDUCERS

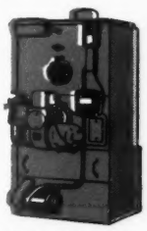
For "big volume" profits... push a "big volume" line!

STOKOL HAS IT!

Oil-fired winter air conditioners—70,000 to 160,000 BTU.

Oil-fired budget furnaces—forced draft, vapor-fire models; 50,000 and 56,000 BTU.

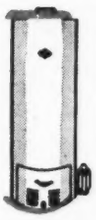
Oil-fired boilers—460 to 920 EDR Steam.



Oil-fired winter air conditioner—economy model; 70,000 BTU.

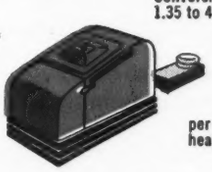
Gas-fired winter air conditioners—70,000 to 160,000 BTU.

Multi-Fuel Furnaces—convertible—gas-, oil-, or coal-fired. Gravity and winter air conditioner models.



Oil-fired water heaters—20, 30, and 45 gals.

Conversion oil burners—1.35 to 4.50 g.p.h.



Hopper and bin-feed stokers—domestic and commercial models from 20 to 1,000 lbs. per hour. Also stoker-fired water heaters—60 and 90 g.p.h.

Blower filter units (not illustrated) up to 2,000 C.F.M.

You bet Stokol has a "big volume" line . . . heating units of the types and sizes that are in greatest demand!

You can furnish your customers the type of equipment they want for the fuel they prefer.

All Stokol units are attractively priced for "big volume" sales. No wonder Stokol means "big volume" profits for you!

You'll enjoy strong factory support . . . prospect-getting national advertising and sales-boosting dealer helps. What's more, every Stokol unit you sell is backed by a nationally accepted name . . . Stokol.

Precision engineering and mass production assure easy installation . . . minimum service calls . . . complete customer satisfaction.

See your nearest Stokol distributor *today* for further details on the few choice Stokol territories still available or mail the coupon below. *Do it now!*

MAIL THE COUPON TODAY

STOKOL STOKER COMPANY, Inc.
Dept. FO-7
2060 Northwestern Ave.
Indianapolis 7, Indiana

Yes . . . I'm interested in learning more about the Stokol franchise in this area. Please send me the facts, together with the name of my nearest Stokol distributor, who will supply further details.

Name.....

Address.....

City.....Zone.....State.....

STOKOL

Your Best AUTOMATIC HEAT Investment

Stokol Stoker Company, Inc.

2060 NORTHWESTERN AVE. • INDIANAPOLIS 7, INDIANA

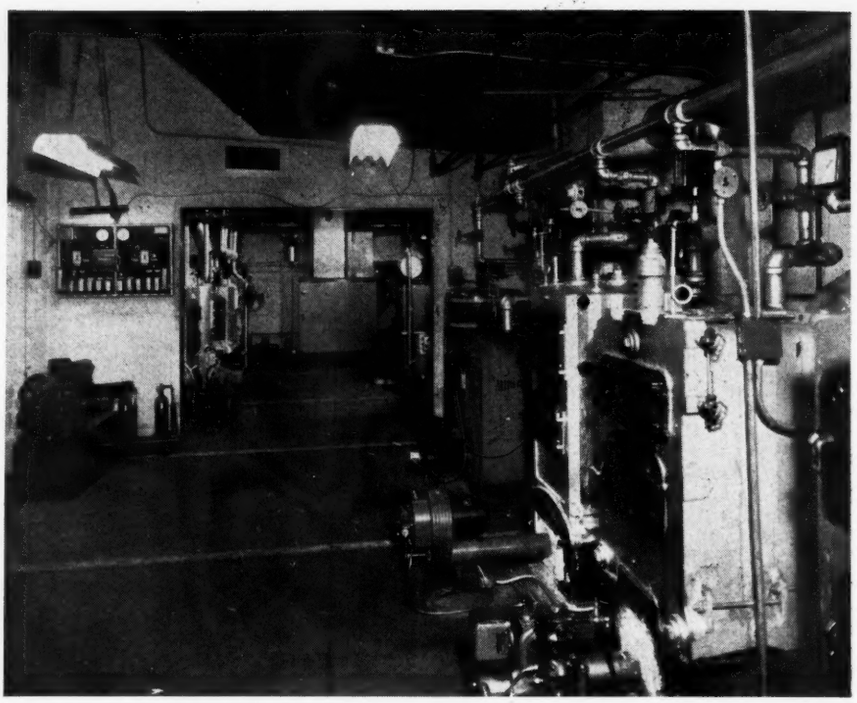
Fueloil & oil heat

Besides being Delco and Coleman distributors, the company also is one of the larger Philadelphia fueloil dealers. J. E. (Ted) Rowland, president, points out that they supplied all customers last winter, and that oil is assured for such new accounts as they will take this year.

The company also distributes major appliances in Pennsylvania, New Jersey, Maryland and Delaware.

New York YMCA School Gaining National Scope

NATIONAL RECOGNITION of the training work being done by the YMCA Trade School in New York is fast being built up. Approximately 500 students already have been graduated from the Automatic Oil Heating Department since it was established in August, 1946, and the course is booked full for months to come. The school is part of the training system established by the Young Men's Christian Association in 1903, which offered one of the first automotive mechanics courses in the East.



A view *of the well-equipped laboratory classroom at the Y.M.C.A. Trade School in New York.*

The laboratory has expanded in arrangement and equipment, and it is now the best equipped oilburner course in the country. It is a constant source of knowledge and advice to other institutions contemplating the same development.

To date 26 oil and burner companies, 4 control companies and one oilburner

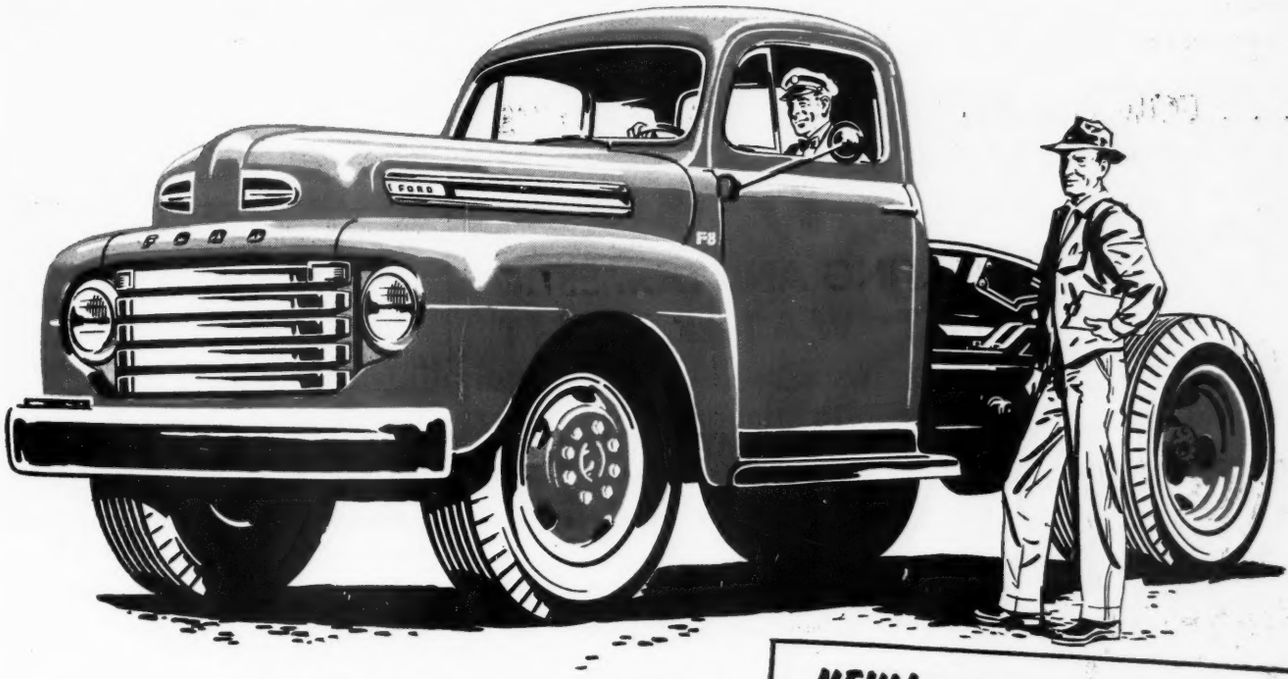
The Bethlehem **DYNATHERM** **is News!**

When engineers—who thought they knew all there was to know about oil burning—marvel at the Bethlehem Dynatherm principle, it's News! And when it means greater economy and a more compact heating unit . . . engineered into one handsome "package" as simple and automatic as a refrigerator—then it's welcome news to homeowners! And the news has a silver lining—when your customers pay amazingly little more for this completely engineered and co-ordinated heating unit, installed in their homes, than for converting an ordinary boiler.

A few exclusive Bethlehem Dynatherm territory Franchises are still available. Wire or write immediately for full information.

THE BETHLEHEM FOUNDRY & MACHINE COMPANY
BETHLEHEM, PENNSYLVANIA

NOW! THE MOST POWERFUL FORD TRUCKS EVER BUILT!



New Ford BIG JOBS! Box car size! Up to 48% higher weight ratings than previous biggest Ford Trucks!

New Ford *Bonus* Built* BIG JOBS rated for up to 37,000 lbs. Gross Train Weight and 21,500 lbs. Gross Vehicle Weight give you the "freshest" thinking in big-truck engineering.

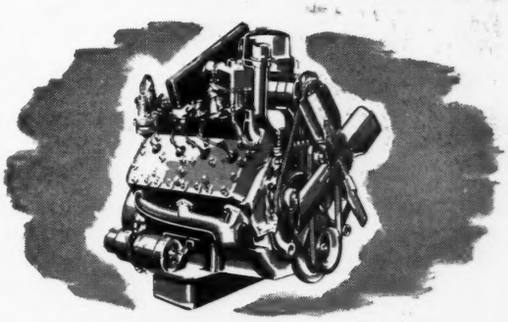
It's down-to-earth engineering, too, backed by over 30 years of truck building experience. The new BIG JOBS are as fit-for-the-job as the world's greatest truck know-how can make them. Ford truck know-how is unequalled because no other truck builder has built as many trucks.

Owing no allegiance to outdated big-truck design formulas, Ford Truck engineers designed an original creation offering a new 145 h.p. V-8 engine . . . up to 10.00-20 tires . . . up to 16-in. by 5-in. rear brakes . . . 5-speed transmission . . . and extra heavy duty construction throughout.

See the new Ford BIG JOBS which head a lineup of over 139 new *Bonus* Built* models. Visit your Ford Dealer today!

***BONUS:** *"Something given in addition to what is usual or strictly due."— Webster*

NEW! ROUGE 337 TRUCK V-8



145 HORSEPOWER
255 LBS.-FT. TORQUE

Most powerful engine ever offered in a Ford Truck! 337 cu. in. displacement. 4-ring aluminum alloy pistons with top ring porous-chrome-plated for better lubrication, long bore life. Hydraulic valve lifters to maintain zero-lash valve adjustment automatically. Exhaust valves faced with hard cobalt-chrome alloy. Dual throat concentric carburetor, correct metering at all operating angles and integral vacuum-type governor. New Loadomatic ignition.

Listen to the Ford Theater, Sunday Afternoons, NBC network. See your newspaper for time and station.

FORD 1948 *Bonus Built* TRUCKS 1948

BUILT STRONGER TO LAST LONGER

LIFE INSURANCE EXPERTS PROVE AND CERTIFY...FORD TRUCKS LAST UP TO 19.6% LONGER!

fuel-oil heat

mechanics union draw exclusively upon this Department for applicants for employment.

During the first eight months of operation the school placed approximately 55% of its students. (The overall average of placement under normal circumstances would be about 45%.) In the late fall months this Department had as many as 25 requests in a single five-day period for oilburner mechanics for employment.

A testing service for industry was established about 11 months ago, its purpose being to render efficiency reports on equipment submitted by manufacturers for testing.

Thirteen manufacturers have already availed themselves of this service and have contributed equipment to the value of approximately $4,000 in return for the report and performance service rendered by the laboratory.

It is not possible to handle the total requests for use of this testing service. This extracurricular activity is giving the Department a national reputation.

. . . FOR GREATER SALES AND PROFITS

ACME DUAL 8

2 in 1 HEATING AND DOMESTIC HOT WATER UNIT

ECONOMY - EFFICIENCY

All combined in this streamlined, green wrinkle finished cabinet boiler-burner unit with handsome chrome trim. High pressure boiler flues. Blanket insulation of 1½ in. rockwool. Heavy stainless steel intensifier tubes, not only serve as baffles but also produce much faster heating with a greatly reduced fuel consumption.

A reliable supply of Domestic Hot Water is furnished thru the Instantaneous Hot Water Coil. This removable "tankless heater" is designed specifically for the

ACME DUAL 8

Equipped with well known gun type burner. . . (flange mounted) and Minneapolis-Honeywell controls

NEW DEALERS WANTED . . . Franchised territories now available for new dealer outlets. Don't delay . . . write today . . . you're money ahead when you feature the easy-to-sell, trouble-free ACME DUAL "8"!

Visit our display at the O.H.I. of New England Exhibit at Hotel Statler, Boston, Mass.—June 7-10 inclusive—Booth 42.

ACME TANK & WELDING
1031 New Britain Ave.
Elmwood (Hartford) Conn.
Please send specifications, prices and franchise details on the ACME DUAL 8.
Firm_____
Street_____
City_____ State_____
Name_____

ACME TANK AND WELDING
DIV. THE UNITED TOOL & DIE COMPANY
1031 New Britain Ave., Elmwood (Hartford), Conn.

Page Committee Report Sees 5% Increase Possible

TOTAL OIL SUPPLY from April 1, 1948 to April 1, 1949 will be increased approximately 8%, but the need for stock build-up will allow an increase of 4% to 5% in demand during the year without resorting to the various distribution expedients used last year, according to the report of the National Oil Policy Committee of American Petroleum Institute. The committee, headed by Howard Page sees an average supply of 6,025,000 barrels a day during the year ahead, including 102,000 barrels a day that imports are estimated by the Bureau of Mines to exceed exports.

The conclusion of the report states: "Even though a breakdown in supply was avoided during the past winter the race between unprecedented demand and record-breaking supply was so close that some spot shortages were unavoidable. It was found impossible, in some instances, to have the right amount of the right product at the right place at exactly the time needed. This past experience indicates that distribution problems become apparent whenever demand reached 95% or 96% of maximum supply capacity.

"It is your committee's opinion that the industry will be able to meet an increase of 4% to 5% in demand during the coming Summer/Winter period without resorting to the various distribution expedients used last year. In the past, the normal increase in demand has been about 4% or 5%. An increase of more than 4% or 5% may result in spot shortages, company allocations and the need for aid from an individual company cooperation with State and local fueloil coordinators in varying degrees depending on the demand.

"If the demand increase in any one product exceeds 4% to 5%, distribution difficulties may be encountered if the demand increase in other products is not correspondingly less."

◈

S. C. French, Akron 3, Ohio, has been appointed sales representative in the state of Ohio for Monogram Products Co., Philadelphia, Pa. He will contact jobbers and manufacturers in his area on sales of Lite-Cast refractory shapes and combustion chambers.

DEALERS PROFIT WITH INDEPENDENT'S LINE OF BURNERS

. . . tops in quality . . priced right!

SUN-RAY • MARINE

(Models from ¾ to 25 gph)

Whether the installation is for a bungalow, multiple dwelling, church or factory . . . whether the specifications require ¾ gph or 25 gph . . . dealers will find *the* oil burner for *the* job in either of Independent's lines.

The design features and manufacturing "know-how" incorporated in Independent's oil burners are based on 40 years of heating experience . . . the years of sales and engineering help, explain Independent's long and steadily growing list of satisfied and successful dealers.

Our latest model features the

SHELL-DESIGNED FUEL SAVING COMBUSTION HEAD

Don't fail to visit our exhibit, Booths 59 and 60, at the New England Biennial of Oil Heat at Boston, June 7-8-9-10.

NOTICE TO BOILER AND FURNACE MANUFACTURERS

Our engineering department stands ready to cooperate with you in solving your burner requirements.

INDEPENDENT
REG. U.S. PAT. OFF.
FULLY AUTOMATIC
OIL BURNERS

NOTICE TO MANUFACTURER'S REPRESENTATIVES

Some valuable territories still available . . . write today for full information.

139-24 Queens Boulevard, Jamaica, N. Y.

Holman Sees Oil Supply Adequate Next Winter

HEATING OIL SUPPLY should be adequate to meet demand next winter, Eugene Holman, president of the Standard Oil Company (N. J.) told the Economics Club of New York, April 21. Speaking on "Public Responsibility in Business," he outlined the large increase in oil-consuming equipment and continued:

"To help meet this sky-rocketing demand we have, on the one hand, stretched to absolute capacity every bit of equipment at our disposal. On the other hand, we have invested huge sums in a program of expanding productive capacity at a rate the greatest by far in our history. Hundreds of oil companies are doing the same.

"As a result, we expect that the industry can supply as much as eight per cent more gasoline this summer than last. Next winter the industry should be able to supply all existing heating oil customers and new dwellings which will require oil rather than some other fuel. No prolonged local shortages or breakdown in distribution can reasonably be expected under present conditions. There may be minor, temporary and localized shortages. Individual service stations here and there may be out of gas for short periods. Naturally, if present conditions change radically—if military needs increase greatly or if major strikes occur—oil, like almost any other commodity under similar conditions, might well be in short supply.

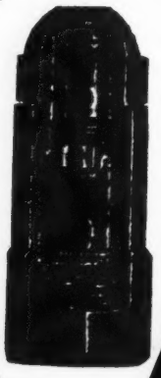
"Another matter of concern to the American people today is prices.

"The action which the management of a particular company should take on prices is not always an easy and simple thing to decide. There are, for example, economists who will maintain that it is *irresponsible* for a company to reduce its prices when, because of factors beyond its control, it is already having to strain to meet demand. These economists will point out that the price reduction will have a tendency to expand demand, and thereby to increase still further the strain on our productive system. I may say that in my own company we were aware of this argument. However, we felt that an increasing oil supply would tend to abate upward pressure on price and that, in the meanwhile, by holding our prices even for a relatively short time, we could help avoid price spirals."

TAKE A MONARCH "TIP"-- AND COMPARE RESULTS!

Most any nozzle will produce some kind of a fire, but —until you have tried Monarch Stainless Steel Nozzles (of a type with spray characteristics matched to your air mixing equipment) you won't know how good they really should be. State make of burner and sketch or accurately describe air mixing head and make test *yourself* with the series Monarch Nozzles we recommend.

Pulsation: We can usually suggest a remedy. Give full details of burner and the job.



Air Cones & Stabilizers

Monarch combinations have been used as original equipment by burner manufacturers for many years and dealers have used thousands of them to make old burners more efficient. Eliminate guesswork—Use this tried and tested equipment and be sure of *results.*
Now available for 3½", 3⅞", 4", 4¼", 4½", 4¾", 6" and 8" I.D. air tubes.

Replacement Valves

Monarch piston type pressure regulating and cut-off valves are available in several models to suit most replacement needs. G-49 valves can be mounted in any position and piston will not jam from dirt. Contain no bellows or diaphragm to break or corrode.

Write for Catalog D

MONARCH MFG. WORKS, INC.
2503 E. ONTARIO ST.
PHILADELPHIA 34 PENNA.

European Distributor: A. Coutau, Ruedela Scie No. 16, Geneva, Switzerland

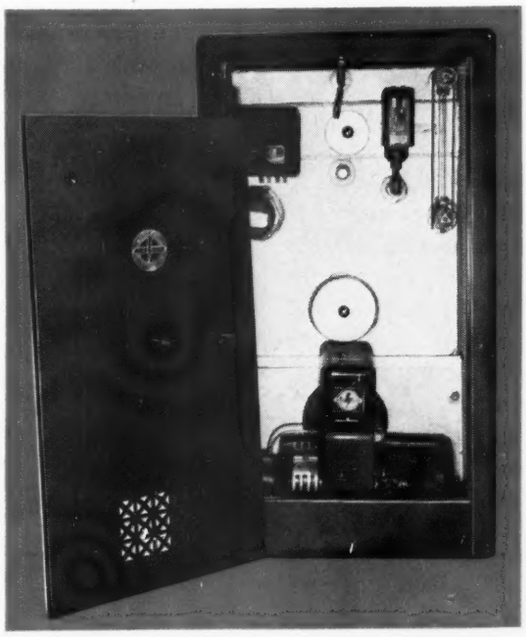
Mexican Development By Cities Service

THE FIRST CONTRACT BETWEEN Mexico and a leading American oil company looking toward the development of oil resources of Mexico was announced April 13 by Senator Antonio J. Bermudez, Director General of Petroleos Mexicanos and W. Alton Jones, President of Cities Service Company.

Under the contract, Mexico-Cities Service Petroleum Corporation, a subsidiary of Cities Service Company, will provide capital for the exploration and development by Petroleos Mexicanos of more than one million acres of oil lands in northeastern Mexico. These lands were formerly controlled by subsidiaries of Cities Service Company. Before a development program could be completed, the Mexican Government took over the operation of oil properties in 1938, but

PERCOFLASH NUMBER 120

SMALL BOILER-BURNER UNIT

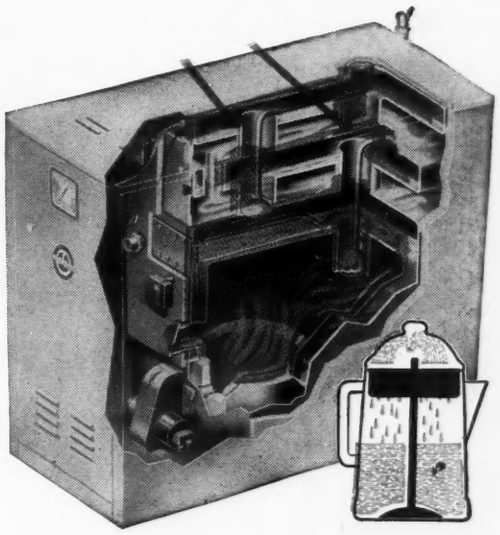


—For the new construction small home field
—Small enough for under-staircase installation
—Nothing finer nor lower in price
—Nothing faster nor more efficient
—Nothing better in oil economy

The No. 120 SPECIFICATIONS

Rating		Jacket Dim.			Flue, Supply, Return		
Stm.	Wtr.	Lg.	Wid.	Ht.			
350	560	35	22	41	7″	2″	2″

Available Now—f.o.b. Madison, N. J. or Chicago, Ill.



—With the patented Percolating Principle
—Flash Action Performance
—All exclusive features and quality construction of the larger Percoflash Boilers with
—Thousands of installations and enthusiastic owners

A Complete Unit

- Beautifully enameled extended jacket
- Built-in tankless heater, 3½ GPM, 180°
- Flange-mounted high pressure oil burner with 3 controls, water or steam trim
- Combustion chamber, removable drawer, draft regulator

Exclusive "PERCOFLASHES"

- Forced circulation through perk system produces maximum internal heat transfer
- No troublesome fire or water tubes
- Completely free of surging or priming
- Internally self-cleaning

PERCO PATENTED FLASH

After You Have Investigated PERCOFLASH, *No Other Boiler Will Satisfy*

WRITE FOR NO. 120 PRICE BULLETIN

ASK TO SEE THE "PERCOFLASH" FRANCHISE PLAN

PERCOFLASH
Incorporated
120 S. LaSalle Street
Chicago 3

WESTCOTT-ALEXANDER
Incorporated
42 Park Avenue
Madison, New Jersey

an exception was made in the case of these Cities Service concessions. They were held by agreement with the Mexican Government in status quo and this recent action is a culmination of negotiations over a period of time.

Exploration activities will start immediately by Petroleos Mexicanos with funds advanced by Cities Service subsidiaries according to Mr. Jones, who flew from New York to Mexico City for the contract signing.

"The area in question is one of the largest and most important in this hemisphere, and extensive geological and geophysical exploration work heretofore done indicates the presence of petroleum deposits and there is every reason to believe the properties will yield large quantities of oil," said Mr. Jones.

◈

Propose Annual Change Of Burner Nozzles

UNDER A PLAN TO stimulate the demand for oilburner nozzles, Delavan Engineering Co., Des Moines, has issued a folder called, "The Safe Sure Way to Service Oilburner Nozzles," in which it advocates an annual nozzle change rather than a cleaning and adjustment. Pointing out that new nozzles are relatively inexpensive, the company states that the average cost of a new nozzle and its installation is about the same as the cost of labor involved in removing and cleaning an old one, while the new one will give more dependable performance. Oil savings are also claimed when nozzles are replaced with each annual clean-up.

◈

An Increasing Number Of Oilburners On Farms

OILHEATING DEALERS in various parts of the Midwest have frequently mentioned since the end of the war the large number of installations they are making in farm homes. A measure of this trend is shown in a bulletin recently published by the rural magazine, "Wallace's Farmer" of Des Moines. The bulletin is called, "1948 Buying Requirements of Iowa Farm Families." Significant is the finding that 14.9% of the families participating in the survey expect to install a central heating plant this year. The division by fuels for these central heating plants is Oil 56%, Coal 25%; Coal-Stokers 19%, and Gas None.

On some other applications around the farm, fueloil is to expand in growth. For example, 4.2% of all the farm families reporting expect to put an oil water heater in the farmhouse, while 1.3% will buy an oil water heater for the milkhouse, and 7.6% will buy an oilfired stock tank heater.

In the poultry department, 2.7% of families expect to buy an oilfired poultry water warmer, while 1.8% plan to buy an oilheated brooder.

◈

"You mean the new electric typewriter hasn't helped my spelling at all?"

There's an automatic **JOHNSON BURNER** *for every heating need . . . large or small . . . domestic, industrial or commercial. If you want high efficiency and enduring fuel economy install Johnson Burners.*

High efficiency "replacement" burners that really save oil.

JOHNSON *Pressure-Type, Automatic*

BANKHEAT BURNERS

Bankheat Burners are ideal for replacement installations. Few burners can match their proven record of economical operation or fuel-saving efficiency.

Bankheat Burners have everything that a home owner wants; dependability that has been time-tested in thousands and thousands of installations; quiet operation; carefree automatic controls; fine workmanship and engineered precision. All this . . . plus their outstanding ability to save oil.

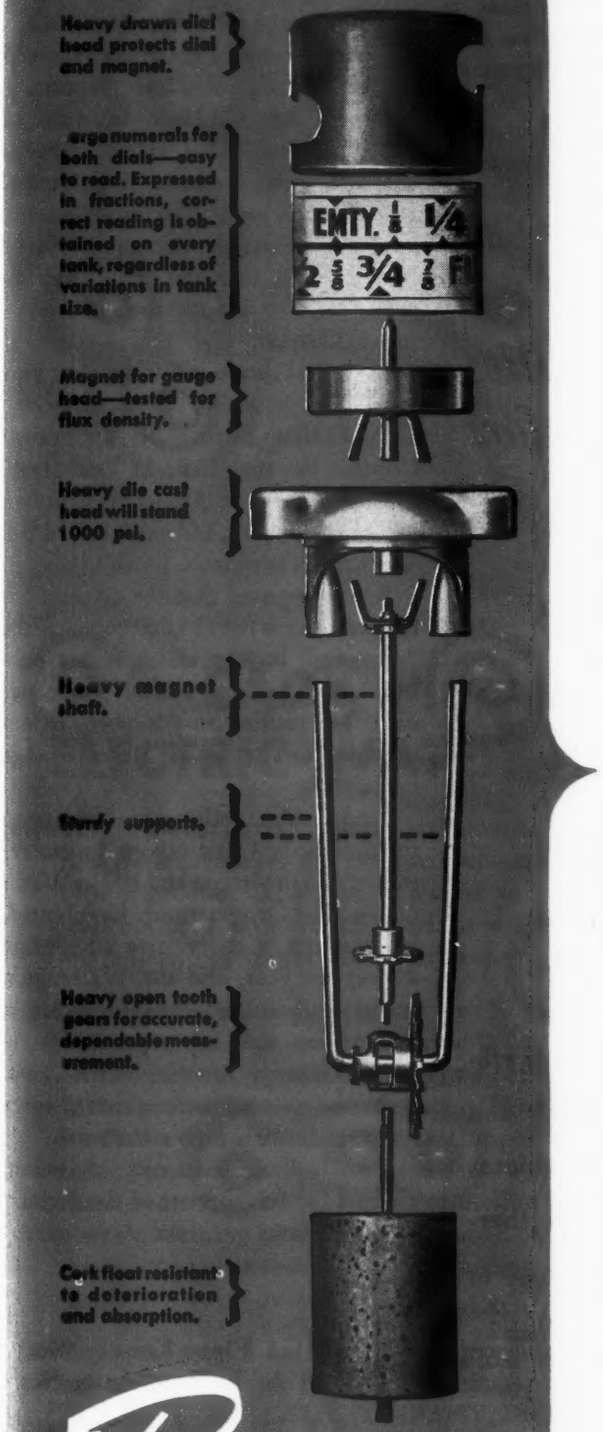
Now is the time to go after replacement sales while oil saving is uppermost in so many minds. Bankheat Burners will make it easier to land these replacement jobs. Let us show you how many advantages they offer . . . and how their easy installation cuts down labor costs and increases your profit. A letter or 'phone call will bring you detailed information.

Johnson Oil Burners

Builders of fine Oil Burner Equipment since 1903

S. T. JOHNSON CO.
940 Arlington Ave., Oakland 8, Calif.
401 No. Broad St., Philadelphia 8, Pa.

ROCHESTER "DUAL-DIAL" OIL TANK GUAGES ARE BUILT UP TO A STANDARD . . NOT DOWN TO A PRICE


Heavy drawn dial head protects dial and magnet.
Large numerals for both dials—easy to read. Expressed in fractions, correct reading is obtained on every tank, regardless of variations in tank size.
EMTY. 1/8 1/4
2 5/8 3/4 7/8 F
Magnet for gauge head—tested for flux density.
Heavy die cast head will stand 1000 psi.
Heavy magnet shaft.
Sturdy supports.
Heavy open tooth gears for accurate, dependable measurement.
Cork float resistant to deterioration and absorption.

Here's the Answer to Customer Preference for "Dual-Dial" Oil Tank Gauges

Take a look at the "DUAL-DIAL" Oil Tank Gauge assembly and you will see why over a million home owners prefer it. Dependability is built into every part. Only the best materials are used. They are checked for quality. Every gauge is double-checked for accuracy before it leaves the plant.

Sure, Rochester *could* make a cheaper gauge. There *are* cheaper gauges on the market. But you get what you pay for, so why kid *your* customer. Sell him a Rochester "DUAL-DIAL" and you automatically build good will because . . .

1. Rochester "DUAL-DIALS" are leakproof against heavy pressure . . . no messes to clean up.
2. Rochester "DUAL-DIALS" are accurate . . . driver and customer see "eye-to-eye" . . . no complaints.
3. Rochester "DUAL-DIALS" have proved the safest gauge . . . Underwriter listed for over 20 years.

And price has never proved an obstacle to customers who are told these advantages.

Build your business with Rochester "DUAL-DIALS"

Made for 275 gallon oil burner storage tanks and stocked for tank depths of 22", 24", 26", 27", 42", 44", and 47"; 1½" and 2" pipe thread connections. Special length to order.

ROCHESTER MANUFACTURING CO., INC.
8 Rockwood Street, Rochester 10, New York
Manufacturers of Fine Gauges for 33 Years

Rochester *Guaranteed Accuracy*

ENGINEERED INSTRUMENTS

LIQUID LEVEL, TEMPERATURE AND PRESSURE GAUGES

BRANCH OFFICES—274 Madison St., New York 16; 32 West Randolph St., Chicago 1; 900 Statler Bldg., Boston; 2949 Harriet Ave., Minneapolis; 1355 Market St., San Francisco 3; 1688 Avenue Rd., Toronto, Ont., Canada.

fuel oil & oil heat

Industry Groups

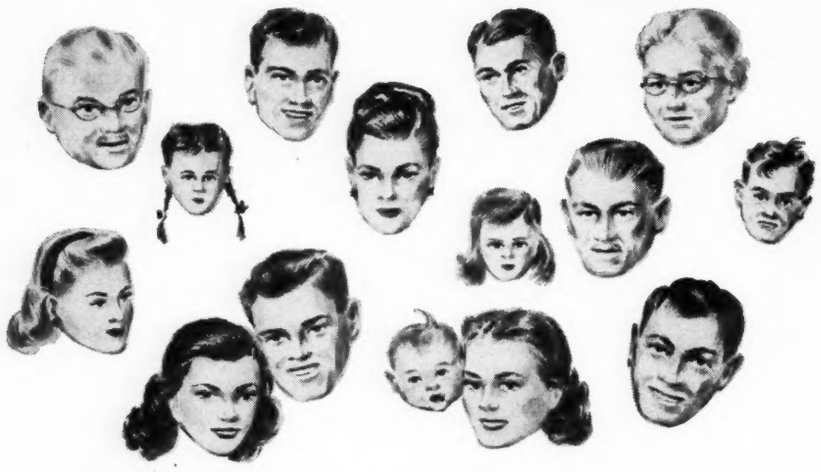
Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their Group's activities to reach the editor by the 20th.

Spiess Is Secretary of OHI Distribution Group

W. O. SPIESS has been appointed National Secretary of the Distribution Division of Oil Heat Institute of America, according to J. A. Collins, division chairman. A. E. (Bert) Whitehill, former secretary, resigned as of April 15.

Mr. Spiess, who joined OHI in the fall of 1947, has been assistant secretary. Following service as a Lieutenant in Naval Aviation and patrol plane commander during the war, he became assistant promotion manager of *Tide*, advertising business paper. Mr. Spiess was graduated as a Bachelor of Science in Economics from the Wharton School of Finance and Commerce of the University of Pennsylvania.

Over a Quarter of a Million Families are Enjoying Solid Heating Comfort with **B&W FIREBOXES**



The heads of these families may not know much about the refractories in their oil burner fireboxes. But they *do* know that their dealers have provided them with solid heating comfort at low cost.

This record of customer satisfaction is a real convincer for the dealer who installs better fireboxes made of B&W Insulating Firebrick. Prospects become customers in a hurry when you show them the figures on thousands of installations where long performance has proved that B&W Fireboxes—

1. **Save fuel due to more efficient combustion**
2. **Minimize odor, soot and smoke**
3. **Assure smoother, quieter burning**
4. **Respond quickly to thermostat demands**

Have you received your copy of the B&W FIREBOX HANDBOOK? If not, send for it today. It is an informative guide to customer satisfaction—and more sales for you—through better firebox design.

R-297

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B&W 80 FIREBRICK • B&W JUNIOR FIREBRICK
B&W 80 GLASS TANK BLOCKS • B&W INSULATING FIREBRICK
B&W REFRACTORY CASTABLES, PLASTICS AND MORTARS

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Stationary & Marine Boilers and Component Equipment
Chemical Recovery Units . . . Seamless & Welded Tubes . . . Pulverizers
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REFRACTORIES DIVISION
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WORKS: AUGUSTA, GA.

Distribution Division, OHI Reports On Year's Activities

TWO CHAPTERS were added to the roster of the Distribution Division, OHI, during the year, it was reported at the annual meeting of the division at Chicago, held April 6, during the Silver Anniversary National Oil Heat Exposition, sponsored by Oil-Heat Institute of America, Inc. The thirty member chapters, now including the Central Pennsylvania and Maryland groups, have a total membership of 1,450, up from 1,062 a year ago. This 38% increase includes 135 members in the Associate Chapter.

Elected as directors for the next year were Lin Bowman, Portland, Ore.; J. A. Collins, Buffalo, N. Y.; Francis Gilbane, Pawtucket, R. I.; Fred Haab, Philadelphia; Carl Jonswold, Chicago; Walter Schroeder, Milwaukee; and Bill Warner, Washington, D. C.

It was reported that the division has received orders for 120,000 copies of the "Answers" booklet which it has published, and has sold 27,000 jumbo size cards for mailing to customers to encourage installation of larger storage tanks.

Fred Griffin, retiring vice chairman for the Pacific Coast reported membership of 136 in Oregon and 100 in Washington. The Oregon group, he reported, has engaged in cooperative advertising during the year, and the Washington group has been successful in getting a quarter-cent state tax removed. He reported no supply troubles on the Coast.

At the meeting were eleven chapter secretaries, a new high attendance.

Joe Collins, national chairman, pledged the full support of the division to the national program of the parent OHI organization.

NWAHACA Plans Convention; Adds Member to Staff

TENTATIVE PLANS have been announced for a mid-year convention to be held by the National Warm Air Heating and Air Conditioning Association, Cleveland 14, Ohio, at the Edgewater Beach Hotel, Chicago, June 29 and 30. The opening day's activities are slated to include a program dealing with industry problems, talks by industry leaders, reports on Association activities and a

Here's your Answer to the fast-growing demand for electric water heaters...

CADY Plug-in ELECTRIC WATER HEATER

With this low-cost electric, water heating unit, you can get added business from customers and prospects who are in the market for this type of product. You'll find it a cinch to install . . . plugs into any wall outlet . . . no electrical work or wiring needed . . . and there are only two ½" pipes to connect to the water tank.

The Cady Heater is designed for any 5 to 30 gallon storage tank. It is clean, odorless, continuous and trouble-free. No wicks to trim, no oil tank to refill, no coal to shovel or ashes to remove. 1000 watt or 1500 watt heating elements for either 115 or 230 volt A. C. approved by Underwriters' Laboratories. Copper and brass water-ways throughout. Fiberglas insulated jacket. Positive, built-in automatic control with temperature adjustable 80° to 180°. 1000 watt element recovery rate 7½ gals. per hour, 60° F. rise. 1500 watt element, 10½ gallons per hour, 60° temperature rise. 6' plug-in cord. Size 4½" x 16½" overall.

Here's your chance to cash-in on a fast growing market. Get a heater sale as well as the job connecting storage tank pipes. Write for full particulars. THE CADY COMPANY, Dept. O, 123 Georgia Ave., Providence 5, R. I. (Subsidiary Of General Fittings Co.)

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WATER HEATER

AUTOMATIC
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ELECTRIC

fuelsil oil heat

luncheon meeting. Fred Smith, executive vice president of the Foreman's League, will be the principal speaker at the luncheon, on the subject, "Management—The Responsibility for Leadership." June 30, the second day, has been set aside as a day strictly for fun, highlighted by a golf tourney.

Randall A. Nelson has joined headquarters staff, in charge of promotional and public relations activities. His first assignment is consolidating and augmenting existing data as a source of trade and consumer publicity campaigns.

State Fuel Administrator Addresses Wisconsin Dealers

WISCONSIN OIL-HEAT ASSOCIATION, INC., Milwaukee 2, Wis., met in regular monthly session and dinner on April 29 and heard a report from Anthony J. Madler, State Fuel Administrator, covering the fueloil supply outlook for the next heating season. President Walter J. Schroeder, and others who attended the Silver Anniversary Exposition and Convention of Oil-Heat Institute of America, held in Chicago, April 5 to 8, reported to the members on plans and programs formulated in which the local group could participate. A discussion followed on the group's future promotion and advertising program to tie-in with the national program of OHI.

An additional member was elected to the board of directors for a two-year term to fill the vacancy created by the resignation of Harry Klingsporn who recently entered the real estate business.

API Marketing Division Convenes At Atlantic City

FOR THE FIRST TIME since its post-war reorganization, the Division of Marketing, American Petroleum Institute, New York 20, N. Y., met at Atlantic City, N. J., on May 6 and 7. Sessions were open to all petroleum marketers, whether or not members of the Institute.

Only two speakers appeared on the program of the general session held the afternoon of the first day: Max W. Ball, director, Oil and Gas Division, U. S. Department of Interior, whose topic was "Looking Ahead with the Petroleum Industry" and Russel S. Williams, president, Individually Branded Petroleum Association, Indianapolis, who spoke on "Eliminating Profit Leaks in Oil Marketing." Open discussion followed both talks. The Division's general committee sponsored an open meeting the morning of May 7.

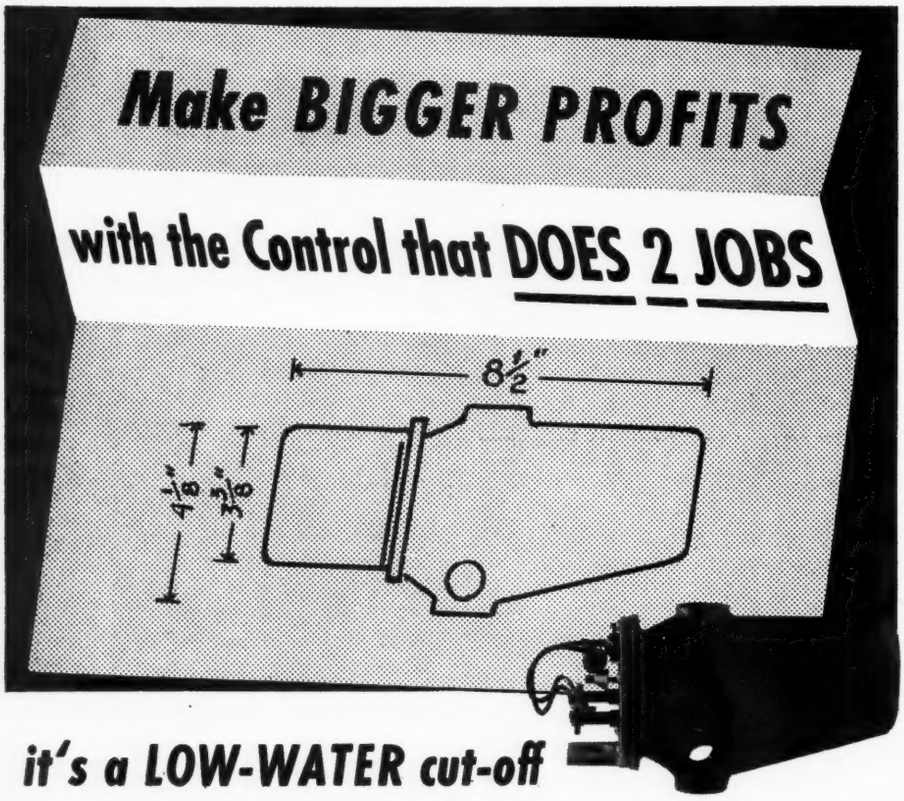
OHOT, Inc. Holds Second Annual Meeting

THE SECOND annual meeting of Oil Heat Old Timers, Inc., Long Island City 1, N. Y., was held on April 22 at National Hall, Woodside, attended by about seventy-five members. Five new directors were named for a three-year term, in accordance with the club's constitution, which provides for a fifteen man board of directors, with five to be elected each year. New directors named were: Vincent Perotto, Joseph Mitidiere, Gus Burrell, Earle Bonn and Henry Warnaar. The directors met on May 6 and elected new officers from the membership of the board, also as provided in the constitution.

As part of its social activities, the club held a successful barn dance on May 14 at National Hall. The dance was for OHOT members and their guests.

Make BIGGER PROFITS

with the Control that DOES 2 JOBS



it's a LOW-WATER cut-off
it's a HIGH-LIMIT cut-off

Your customers will eagerly pay you more for the extra safety of this double-duty Newark control. Simple, foolproof, it cuts off current when water level gets too low or when pressure gets too high.

THE COST TO YOU? About the same as a good single-purpose unit! Installation time is about the same, too.

EASILY CONNECTED to either oil or gas systems. Comes in sizes for all popular types of low-pressure boilers, complete with gauge-glass hookup fittings or for 2½" boiler tappings. Built of long-life bronze to resist rust, scale, corrosion.

STOCK NOW for summer installation. Tie in its strong safety appeal when doing routine summer repair jobs! Write for high-profit-for-you prices today.

Newark Controls
15 Ward Street
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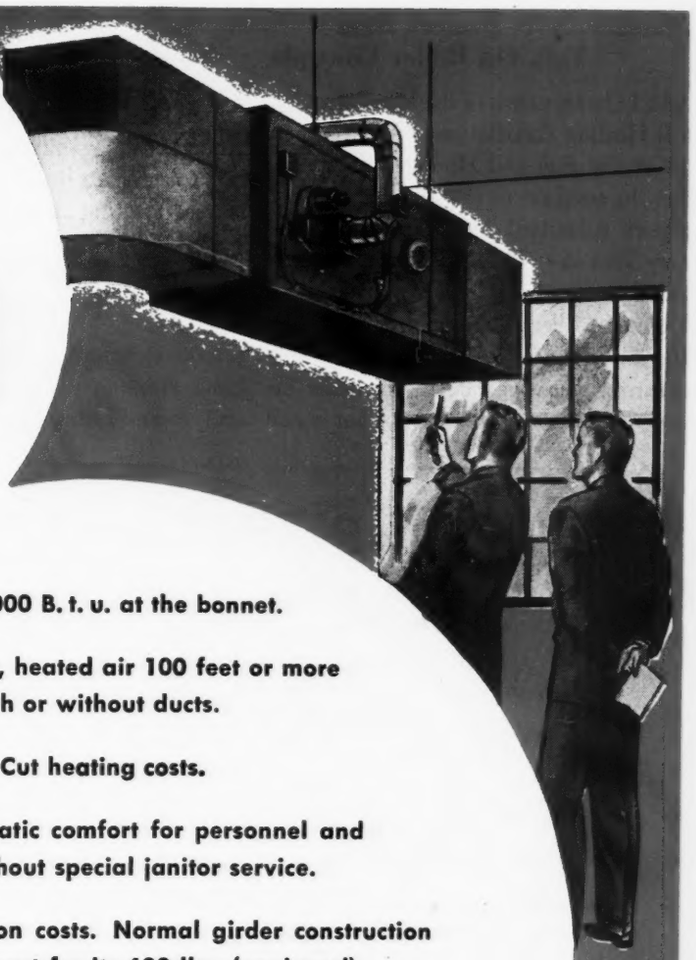
Superfex
OIL-FIRED
Overhead Units



- ✔ **Produce 200,000 B. t. u. at the bonnet.**
- ✔ **Deliver active, heated air 100 feet or more from unit, with or without ducts.**
- ✔ ***Save fuel oil.* Cut heating costs.**
- ✔ **Assure automatic comfort for personnel and customers without special janitor service.**
- ✔ **Cut construction costs. Normal girder construction adequate support for its 600 lbs. (equipped).**
- ✔ **Cut installation costs. "Package" units, shipped assembled.**
- ✔ ***Put YOU into a NEW PROFITABLE MARKET with the answer to many modern commercial heating problems.***

Write for Literature and Dealership Details

Superfex
OIL-FIRED *OVERHEAD UNITS*

Made by PERFECTION STOVE COMPANY
7029-A Platt Ave., Cleveland 4, Ohio

Ideal for Stores, Garages, Service Stations, Sub-Stations, Warehouses, Churches, Auditoriums, Waiting Rooms, Small Factories, Hangars, "Taxpayer" Buildings, etc.

Massachusetts Dealers Hear Talk On Boiler Controls

THE 153D MEETING of the Massachusetts Oil Heating Association was held April 20 at the Fox and Hounds Club, Boston. In addition to the regular monthly report submitted by Honorary Secretary-Treasurer Fred Beckwith, the featured speaker was Nils Swanson, McDonnell-Miller, Chicago. He discussed the latest developments in boiler safety controls, with particular emphasis on controls and safety devices for hot water heating systems.

As required by the by-laws of the Association, President Clarence Warner, General Oil Co., Medford, Mass., chose a nominating committee of three members to submit a list of candidates to the annual meeting in May.

Outlines I-B-R Educational Program

SPEAKING before a meeting of the Virginia Association of Master Plumbers and Steam Fitters, held at Old Point Comfort on April 20, V. W. Blackney, assistant general manager of sales, United States Radiator Corp., Detroit, and a member of the educational committee, Institute of Boiler and Radiator Manufacturers, New York, N. Y., outlined the Institute's expanded educational program of field training.

A second midwestern area short course in hot water and steam heating methods is being held June 15-17 at the University of Illinois, Urbana, which will be similar to the first short course given in Chicago last September. In addition, Mr. Blackney reported an initial short course for the eastern area will be held during July at the Virginia Polytechnic Institute.

In a further move to place the I-B-R education program on a continuing basis, the Institute has employed a highly qualified instructor who will spend his entire time conducting field training classes. Mr. Blackney described these as being of two or three day duration, with instruction following closely the pattern of the short courses. Meetings are scheduled throughout the country at dates and places to be announced.

Heating, Piping Contractors To Meet In Pittsburgh

THE FIFTY-NINTH annual convention of the Heating, Piping and Air Conditioning Contractors National Association is scheduled to be held at the William Penn Hotel, Pittsburgh, June 2, 3 and 4. Association president James M. Anderson, commenting on subjects of talks and papers, said: "Such issues as the Taft-Hartley Act and its effect on collective bargaining, newest developments of the Certified Pipe Welding Bureau, the Marshall Plan and its effect on the supply of pipe, apprentice training and other interesting subjects will be discussed. . . ." In addition, reports of association committees will be rendered by their chairmen and new officers will be elected.

Officers Elected By Propeller Fan Association

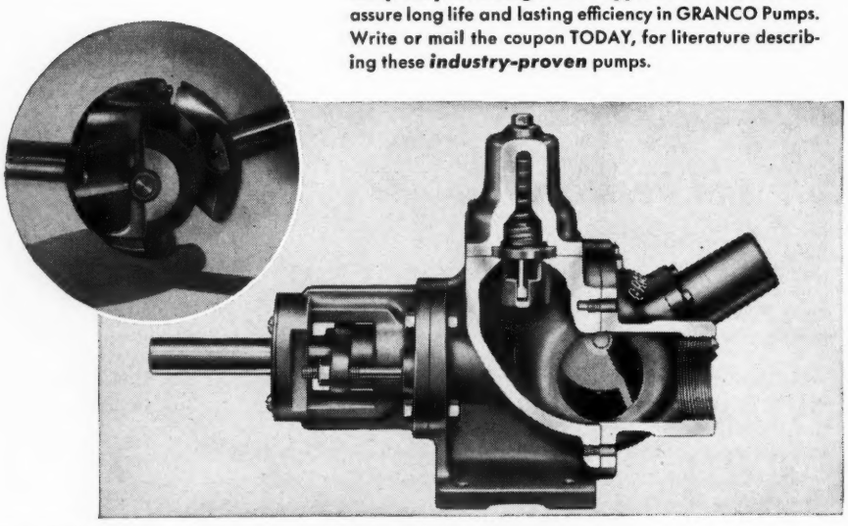
AT THE NINTH ANNUAL MEETING, held recently by the Propeller Fan Manufacturers' Association at Daytona Beach, Fla., Lyman C. Reed, president, Reed Unit-Fans, Inc., New Orleans, was elected president; W. J. Lohman, Jr.,

GRANCO PUMPS ARE QUIET ...LAST LONGER!

- ★ Quiet at all speeds
- ★ Chatterproof relief valve
- ★ No metallic contact between the rotor and the housing
- ★ Outboard ball-bearing for perfect alignment
- ★ The rotor is the only moving part

There is no metallic contact between the rotor and the housing. GRANCO Rotary Positive Displacement Pumps produce a smooth, even flow, without the grinding gear noise common to ordinary pumps used in the petroleum industry. This quietness is permanent in GRANCO Pumps —an important feature in modern trucks where skirtings pick up and amplify motor and pump sounds from below. Vibration caused by chattering of the relief valve has been entirely eliminated in the GRANCO Pump, as this valve is integral with a dashpot which positively prevents hammering.

Simplicity of design and ruggedness of construction assure long life and lasting efficiency in GRANCO Pumps. Write or mail the coupon TODAY, for literature describing these ***industry-proven*** pumps.



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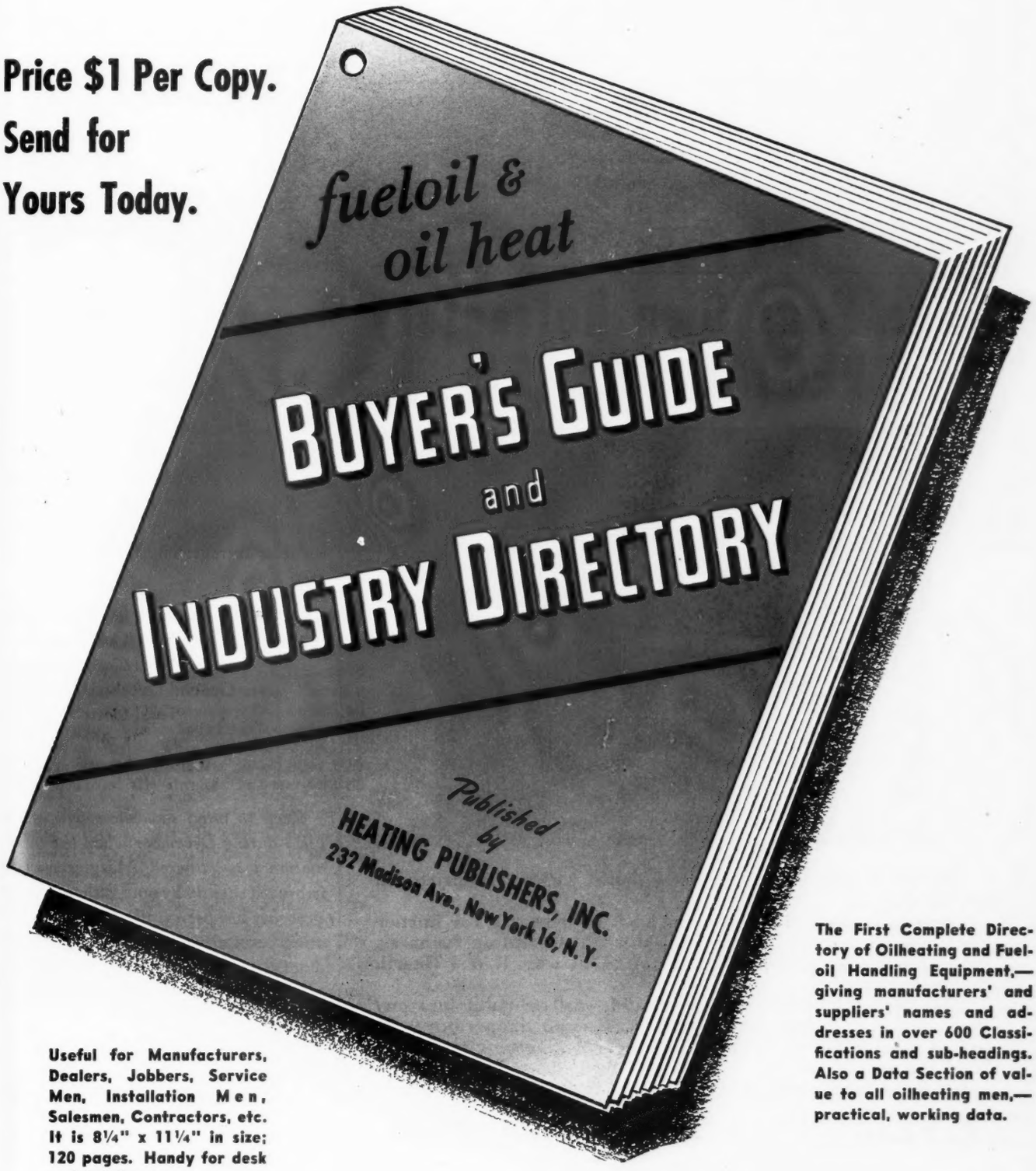


Useful for Manufacturers, Dealers, Jobbers, Service Men, Installation Men, Salesmen, Contractors, etc. It is 8¼" x 11¼" in size; 120 pages. Handy for desk and brief case.

The First Complete Directory of Oilheating and Fuel-oil Handling Equipment,—giving manufacturers' and suppliers' names and addresses in over 600 Classifications and sub-headings. Also a Data Section of value to all oilheating men,—practical, working data.

HEATING PUBLISHERS, Inc.

232 Madison Avenue
New York 16, N. Y.

fueloil & oil heat

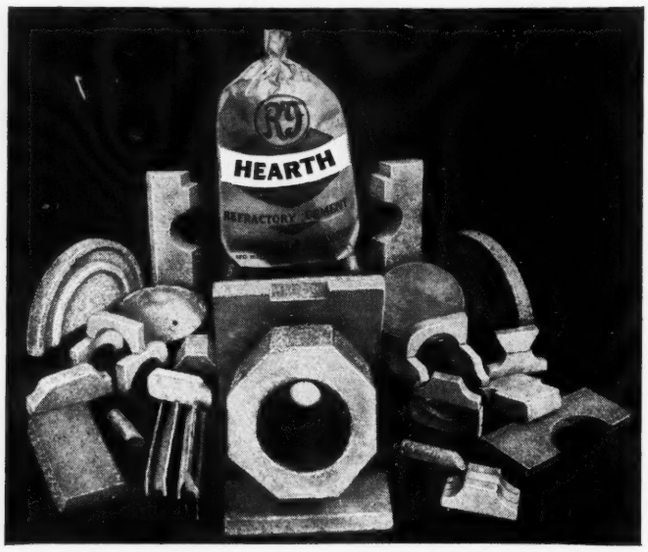
Chelsea Products, Inc., Irvington, N. J., became vice president; L. O. Monroe was re-elected secretary-treasurer.

Refrigeration Group Names 1948 Officers

H. F. HILDRETH, sales manager, refrigeration specialties division, Westinghouse Electric Corp., Springfield, Mass., was elected president of the Refrigeration Equipment Manufacturers Association, Cleveland, at its annual board of directors meeting held April 1-3 at Chicago. He formerly was in charge of Westinghouse's oilheating division, which was discontinued during the war.

Other new officers named were: Vice president, K. B. Thorndike, vice president, Detroit Lubricator Co., Detroit; treasurer, R. H. Isreal, sales manager, Virginia Smelting Co., W. Norfolk, Va.; secretary, G. M. Kingsland, sales manager, specialties division, Minneapolis-Honeywell Regulator Co., Minneapolis. With the retiring president, these officers become the group's executive committee.

Make Your Own Refractory SPECIAL SHAPES



There's no need to tolerate slow delivery and high prices on special shapes.

You can easily and quickly make accurate shapes for burner blocks, baffles, boiler settings, oil stills, heat-treating furnaces, furnace walls, or practically any condition with R & I Hearth Refractory Cement.

Simply mix it with water and mold, cast or tamp into any shape or form. It dries without shrinkage at air temperature. Its fusion point is 2450° F., and the cold crushing strength is about 2844 lbs. per sq. in.

Get it from your supply house. Write us for Bulletin R-37.

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R&I

HEARTH REFRACTORY CEMENT

Readers' Forum

KOENIG COAL & SUPPLY CO.
Detroit 7, Michigan

Editor:

In FUELOIL & OIL HEAT for the month of January, 1948, you published a compilation of operating costs against margins for companies with bulk plants. This record was an average of the entire country.

Do you have this information broken down among companies in different areas? We would like to have the breakdown of operating costs in the midwest area, specifically the Detroit area, if you have this information available.

NORMAN J. FREDERICKS

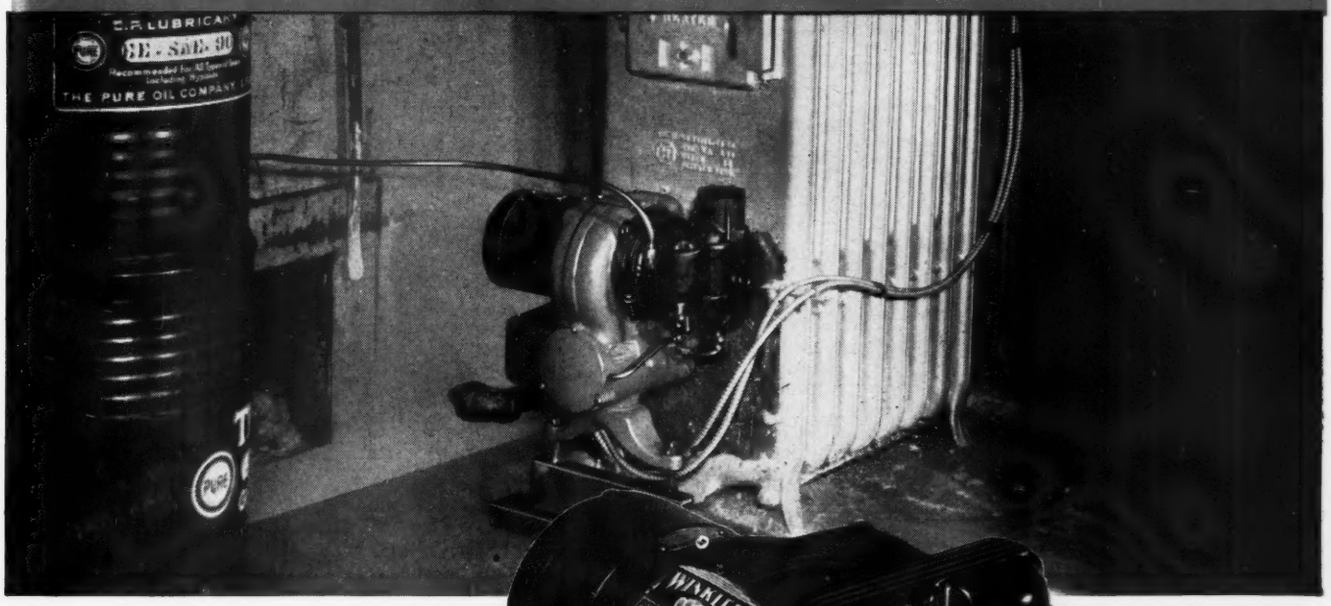
We do not have enough data on individual cities like Detroit to feel that we have a representative situation, but we are glad to give you the figures for the Midwest as a whole. Over that large an area we do have a sufficient number of returns to feel that we can attain an accurate average. The Midwest averages are:

Bulk Plant Operating Costs	$ .26
Delivery Costs	.85
Sales Costs	.21
General Overhead	.45
Total Costs	1.77
Profit	.37
Average Margin	2.14

Keep in mind that these figures applied during December when the information was gathered. Margins may be improved slightly by now, although there probably has been little change in operating costs other than for the extraordinary costs brought on by fueloil supply emergency situations.

"... and when the housewife slams the door, don't use your foot - you can't sell brushes with your foot!"

BURNS *CRANKCASE* DRAININGS
BURNS *CATALYTIC* OILS
BURNS *JUST ENOUGH* OIL



WINKLER CHALLENGES ANY OIL BURNER TO MATCH THIS PERFORMANCE

The Winkler LP* Oil Burner, ¾ GPH, pictured above is installed in a filling station. During a 60 day test period, this standard unit burned all crank case, transmission and rear axle drainings obtained by the station. When waste oil ran low, No. 4 oil was added—estimated to be less than 20% of all oil burned. No filter or dirt trap was used.

During the test run, the burner needed no adjustment or attention. The CO_2 content of the flue gas was 11% both at the start and end of the run, and no soot or smoke ever formed.

When the Fuel Unit was disassembled, it was found full of sand, steel chips and sludge—yet the burner operated perfectly and the nozzle was free and unobstructed.

Could you ask for better proof of the service-free dependability of the rugged Winkler LP* Burner?

SAVES UP TO 50% IN OIL

The amazingly low fuel consumption of the Winkler LP* Burner is primarily due to the fact that it can be properly sized to the smaller heating plant. It will burn as little as ¾ gallons per hour—ending the waste of heat caused by over-sizing the burner to prevent nozzle clogging.

DISTRICT MANAGERS WANTED

An outstanding opportunity for high grade men to make substantial earnings in franchised territories. Write today, giving full information on your qualifications.

THE NEW WINKLER *LP OIL BURNER

***LOW PRESSURE**

Featuring—

1. **Non-clogging service-free Nozzle**
2. **Exclusive super-efficient Air Cone Stabilizer**
3. **Exclusive positive displacement Fuel Metering Unit**

THE WINKLER *Econo-Flame*

A radically improved design in high pressure burners. Features the Deflecto-Air principle—producing correct oil—air pattern for complete combustion. This burner gives hi-pressure operation at its best.

WINKLER

Automatic Heating Equipment

U. S. MACHINE CORPORATION, Dept. AO-37, Lebanon, Indiana

fuelfoil & oil heat

Pressure and Vacuum Tests

A BURNER DEALER who likes to lend a professional touch to his work recently gave each of his servicemen two handsome new gauges, one for pump pressure and one for vacuum. At a special service meeting, he brought out the following points regarding pressure and vacuum tests for pressure burners.

A pressure gauge which reads up to 150 or 200 lbs. pressure should be used when a new burner is being started, when a burner already installed is being checked thoroughly, and when questions arise about loss of prime, wear in

fueloil & oil heat Short Short Article on Burner Service

old oil pumps or fuel units, and fuel unit misbehavior in general.

You may believe, along with certain oilburner engineers, that 100 lbs. atomizing pressure should be used for every pressure burner. If you do, use your pressure gauge to make certain the nozzle pressure is set at 100 lbs. Check this even on a new burner.

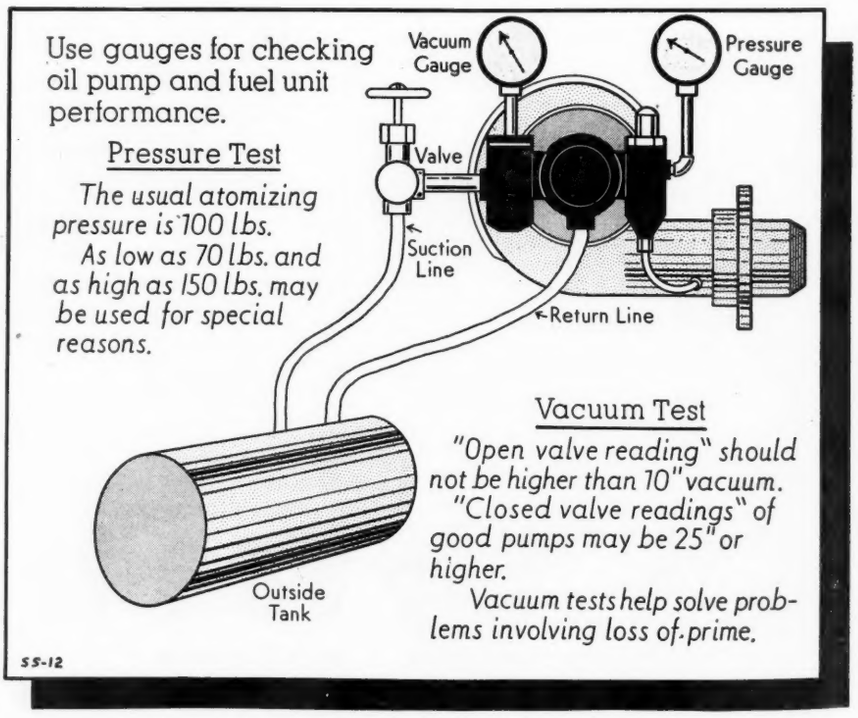
On the other hand, you may believe in using pressures as low as about 70 lbs. to avoid nozzle-plugging tendencies on jobs which need very small fires. Rather than use a nozzle rated at lower than 1.0 gph to obtain a very small flame, you may want to use a 1.0 gph nozzle and 70 or 80 lbs. atomizing pressure. Also, you may believe in using up to 125 or 150 lbs. pressure for large installations on which you are certain the unusually high pressure gives better results. Thicker fueloil may seem to you to be atomized better with higher pressure than 100 lbs. The particular nozzle in the burner may give excellent combustion only when higher than usual pressure is applied to it. Very seldom is an oilburner motor overloaded by adjusting for unusually high atomizing pressure, and you may be certain that on the particular installation the use of 150 lbs. pressure, for example, does not overload the motor. If your thoughts and tendencies regarding the use of pressures lower or higher than 100 lbs. run in these directions, of course you must use a pressure gauge in tuning a pressure burner. Reading the gauge tells you when you have adjusted for the pressure you desire.

In trouble-shooting, a pressure gauge is used to make sure that the fuel unit gives steady nozzle pressure. On installations where trouble may be caused by the pump's being weak, try atomizing pressure considerably higher than usual. If 100 lbs. pressure generally is used, try the pump at 150 lbs. pressure. Inability to develop higher than usual pressure, or fluctuations in the flame size with the higher pressure, indicates something is wrong with the oil pump.

If on an outside tank installation you believe that suction line leaks may be causing singing sounds in the oil pump and dipping of the needle of the pressure gauge, connect the burner to a five-gallon can of fueloil standing next to it. Use ¼" or 5/16" copper tubing for the suction and return lines from the burner to the oil can, and you can set up in a few minutes for your testing. If the pump singing and pressure fluctuations are stopped by giving the burner oil from the can, suction line shortcomings are giving the trouble.

To take vacuum gauge readings, screw a vacuum gauge into the proper opening in the fuel unit, run the burner, and read the gauge. The "open valve reading" obtained in this way on an outside tank installation should not be higher than 10". Next and with the burner still running (open the flame observation door of the boiler or furnace, to play safe), close tight the valve in the suction line. This gives the "closed valve reading" and tells the maximum vacuum which can be developed. Opinions on this are different, but seemingly the most critical burner dealers declare that to be considered "good" a fuel unit or oil pump must give a "closed valve reading" of at least 25". Any dealer having difficulty with oil pumps or fuel units should take "open valve" and "closed valve" readings on half a dozen typical installations. Reporting these to the manufacturers of the oilburners and fuel units or oil pumps, and starting discussions of the problems, usually leads to obtaining solutions to the problems.

Don't blame the oil pump for breakdowns and noise if on a trouble job you obtain an "open valve reading" considerably above 10" vacuum. The trouble lies in the pump's having to work too hard in drawing oil from the outside tank. The suction line may be undersize or kinked, or the suction line strainer may need cleaning.


Use gauges for checking oil pump and fuel unit performance.
Pressure Test
The usual atomizing pressure is 100 lbs.
As low as 70 lbs. and as high as 150 lbs. may be used for special reasons.
Vacuum Gauge
Pressure Gauge
Valve
Suction Line
Return Line
Outside Tank
Vacuum Test
"Open valve reading" should not be higher than 10" vacuum.
"Closed valve readings" of good pumps may be 25" or higher.
Vacuum tests help solve problems involving loss of prime.
55-12

Compare NEW DODGE "Job-Rated" TRUCKS feature for feature!

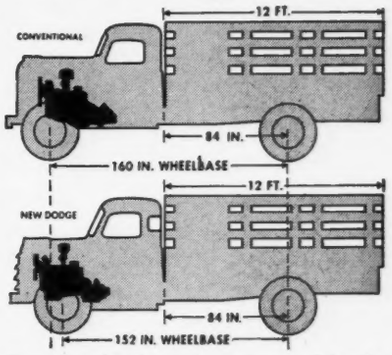
Read this 10 Point Comparison

(Dodge Model F-152; 14,500 pounds Gross Vehicle Weight—and Comparable Competitive Models.)

FEATURES AND ADVANTAGES	DODGE "Job-Rated" TRUCK	TRUCK "A"	TRUCK "B"	TRUCK "C"	TRUCK "D"
Wheelbase	152 in.	161 in.	158 in.	159 in.	161 in.
Cab-to-Axle—to take 12-foot body	84 in.	84 in.	84.06 in.	84 in.	84 in.
Wide-Tread Front Axles (shorter turning—more stability)	62 in.	56 in.	60.03 in.	58⅜ in.	56 in.
Modern "Cross-Type" Steering	Yes	No	No	No	No
Turning Diameter * —Left —Right	50½ ft. 50½ ft.	61½ ft. 61½ ft.	60½ ft. 54½ ft.	54½ ft. 54½ ft.	66½ ft. 66½ ft.
Maximum Horsepower	109	93	100	93	100
Total Spring Length (Front and Rear "Cushioned Ride") †	194 in.	171⅜ in.	162 in.	176 in.	182 in.
Cab Seat Width (Measure of Roominess) ‡	57¼ in.	52¼ in.	51½ in.	47½ in.	52¼ in.
Windshield Glass Area ▲	901 sq. in.	713 sq. in.	638 sq. in.	545 sq. in.	713 sq. in.
Vent Wings plus Rear Quarter Windows	Yes	No	No	No	No

* To outside of tire (curb clearance.) Computed from data based on tests or computations obtained from usually reliable sources. † All four springs. ‡ Measured from production models. ▲ Computed from width and depth measurements; no allowance for contours.

Better Weight Distribution Easier Handling Shorter Turning Diameters

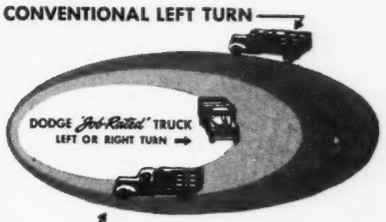


Front axles have been moved back, engines forward, placing more load on the front axle. While cab-to-axle dimensions are the same, wheelbases are shorter, giving better weight distribution, and increased payload.

This new weight distribution, combined with longer springs, produces a marvelous new "cushioned-ride."

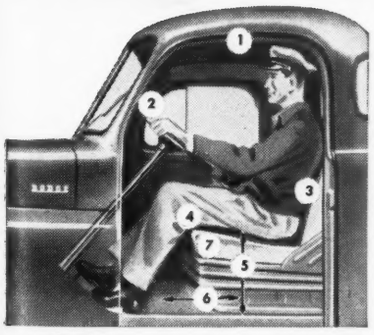
You get still more comfort from new "Air-O-Ride" seats, with their easily controllable "cushion of air."

CONVENTIONAL LEFT TURN



CONVENTIONAL RIGHT TURN

You can turn in much smaller circles, both right and left—you can back up to loading platforms or maneuver in crowded areas with greater ease—because of new type "cross-steering," shorter wheelbases, and wide tread front axles. In all, 248 different "*Job-Rated*" chassis and body models. Up to 23,000 lbs. G.V.W. Up to 40,000 lbs. G.T.W.



1—PLENTY OF HEADROOM.

2—STEERING WHEEL . . . right in the driver's lap.

3—NATURAL BACK SUPPORT . . . adjustable for maximum comfort.

4—PROPER LEG SUPPORT . . . under the knees where you need it.

5—CHAIR-HEIGHT SEATS . . . just like you have at home.

6—7-INCH SEAT ADJUSTMENT . . . with safe, convenient hand control.

7—"AIR-O-RIDE" CUSHIONS . . . adjustable to weight of driver and road conditions.

fueloil & oil heat

Manufacturers Activities

Preferred Utilities Completes Move to Danbury, Conn. Plant

DANBURY, CONN. is the site of the new factory of Preferred Utilities Mfg. Corp., New York 23, N. Y., where all of the company's manufacturing operations now are concentrated. A railroad siding through the plant, overhead cranes, specially-designed bays and modern manufacturing devices make the factory particularly adaptable for the type of combustion accessories supplied by Preferred.

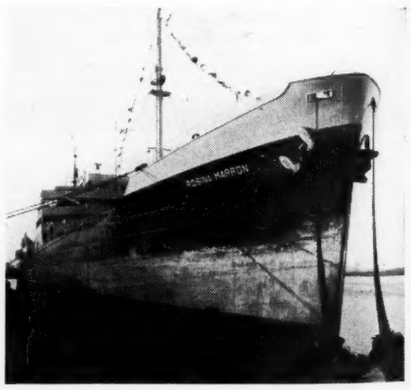
Occupying the new modern brick and glass-walled factory completes a 27-year business cycle, which began when the company first became eastern distributor for a line of industrial oilburning equipment. Operating refinements which came later, and to which Preferred's engineering staff contributed, include development of burners capable of operation with heavier grades of oil and adapting heavy oilburners for automatic firing.

In 1932 Preferred introduced a new, small horizontal rotary oilburner, used with great success in a line of ranges, ovens and water heaters. Another combustion device, in the development of which Preferred played a prominent part, is the Draft-A-Justor, a precision-built barometric control to maintain automatically minimum amount of draft required for maximum efficiency. Both domestic and industrial sizes are offered.

One of the projects involved in Preferred's war work was the development of a "packaged" power plant, consisting of an oilburner, boiler, controls and necessary equipment to set up for steam generation, not requiring a stack. The unit now is available as the Preferred unit steam generator and its success was a major factor in inducing the company to select and develop the Danbury factory site.

Coastal Oil Registers Tanker In Newark, N. J.

ON APRIL 15 a ceremony was held christening the tanker Rosina Marron for Coastal Oil Co., Newark, N. J. The tanker is the first large ship to be registered with Newark as its home port. Present at the ceremony was an audience of two hundred persons, including Acting Mayor John Brady, Newark, who praised Coastal for establishing a terminal at Port Newark before the war.



Louis E. Marron, founder and chairman of the board of Coastal, also spoke and the christening ceremony was performed by his wife. Mr. Marron revealed that the ship was named for his late mother.

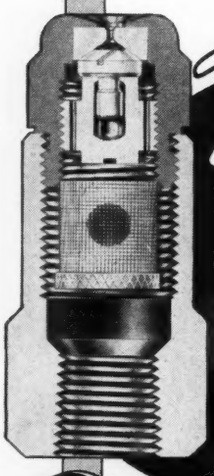
The Rosina Marron, a former T2 tanker, was acquired by Coastal early this year and was reconditioned completely by the Todd shipyards. She is 504 ft. long and has a capacity of 140,000 bbls. Built for the government in

Replace

THAT OLD NOZZLE AND SAVE OIL!

Oil passages in a nozzle are so small that they are measured in 1/10,000 of an inch. That is why it is almost impossible to get an old nozzle perfectly clean once these passages become partly clogged with deposits from oil. Even in the finest burner with the best oil, a dirty nozzle produces a poor flame, restricts oil flow and results in poor burner efficiency. That's why so many servicemen say "Replace the nozzle every heating season and save oil."

Always specify Delavan



Balloffet Design NOZZLES by DELAVAN for DEPENDABLE, EFFICIENT PERFORMANCE

MEMBER OHI OIL HEAT INSTITUTE OF AMERICA

DELAVAN Engineering Co.
DES MOINES 9, IOWA

LABORATORY TESTS PROVE FUEL SAVINGS UP TO 10%

Faster "Skin Heat" for J-M Insulating Fire Brick by actual test

The inside surface of fireboxes built of Johns-Manville Insulating Fire Brick becomes white hot almost instantly.

This advantage allows the burner to operate at peak efficiency. Soot formation is retarded. Fuel is not wasted in heating the brick to the right temperature or in obtaining the desired CO^2. Heat loss is reduced to a minimum by the low thermal conductivity of J-M Insulating Fire Brick. Lightweight, cellular construction contributes to quieter oil burner operation.

On the off cycle, fireboxes built with J-M INSULATING FIRE BRICK *cool* faster—an advantage which retards carbon formation on burner tips, reduces the number of annoying service calls.

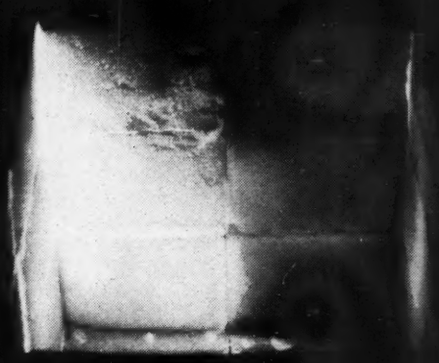
J-M Insulating Fire Brick is easily installed . . . can be cut quickly with a hack-saw blade . . . can be used to build any shape or size firebox recommended by the oil burner manufacturer. It is packed in cartons that are light, easy to handle.

For sealing against gas and air leaks, use J-M FIREITE* FURNACE CEMENT. It sets without application of heat . . . is odorless . . . ready mixed and easy to work.

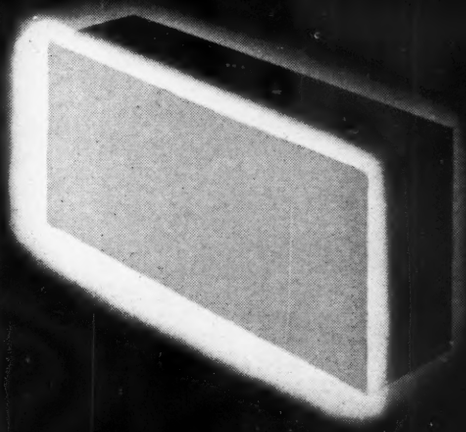
Call your Johns-Manville Distributor for Insulating Fire Brick, Firecrete,* Fireite and other J-M Refractories.

*Reg. U. S. Pat. Off.

JOHNS-MANVILLE JM PRODUCTS



TEST FIREBOX built of J-M INSULATING FIRE BRICK and ordinary dense fire clay brick photographed within seconds after firing. Note the white hot glow from the J-M Insulating Fire Brick on the left while the dense fire clay brick is still heating up.



This illustration shows the "skin heat" of J-M Insulating Fire Brick —which occurs within seconds after the burner goes on.

Johns-Manville *First in* **INSULATIONS**

BOILER UNITS
•
AIR CONDITIONING
FURNACE UNITS
•
Dealer Franchises Open
— WRITE TODAY!

Paragon
NONE BETTER
OIL BURNERS

WRITE or USE THIS COUPON
Paragon Oil Burner Corp.
75 Bridgewater St., Brooklyn 22, N. Y.
Gentlemen:
Rush your dealer proposition today!
Name
Firm Name
Address
POB 96-448

1943, the tanker saw service in the Pacific Theater at Saipan, Okinawa and the landing at Tokyo. Mr. Marron intimated that the Rosina Marron was the forerunner of a fleet of tankers operating from Port Newark.

Elliott-Lewis Merges With Electrical Co.

MERGER of Elliott-Lewis Co., Inc. and Elliott-Lewis Electrical Co., Inc. into one firm has been announced. The new company, to be known as Elliott-Lewis Corp., will have its headquarters at 2514 N. Broad St., Philadelphia and will continue to service dealers in the eastern half of Pennsylvania, southern New Jersey, Delaware and eastern Maryland with an augmented line of home appliances, heating and air conditioning.

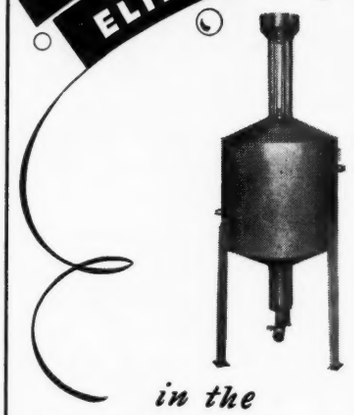
More than 3,000 dealers are serviced in the four-state area by the company, which acts as sales representatives for Delco-Heat, Coleman Co., York Corp., G.E. Industrial Corp., F. C. Russell Co., and allied manufacturers. Plans are being drawn up now for a new building with 150,000 sq. ft. of floor space, railroad sidings and loading platforms to house all the company's showrooms and warehouses under one roof.

Elliott-Lewis Electrical Co. was founded forty-five years ago by the late Frank Elliott and T. H. Lewis. Fifteen years ago Mr. Lewis withdrew and established Elliott-Lewis Co. to concentrate on air conditioning and heating. He remains as board chairman of the new firm. J. E. Rowland will be general manager, as well as president. Other officers are vice presidents Frank Elliott, Jr., assistant general manager; Victor Lazo, in charge of wholesale operations; J. C. Campbell in charge of retail operations; Joseph Call, in charge of refrigeration and air conditioning and Warren Muir. A. M. Morton is treasurer; Otto L. Draeger, secretary.

Mueller Announces New Sales Promotion Policy

TO PROVIDE permanent sales catalogs and eliminate wastefulness in distribution of sales literature, L. J. Mueller Co., Milwaukee, Wis., has made available to all its accounts permanent leatherette sales binders. Each binder is divided into three groups: Prices, containing price sheets

AIR AND VAPOR BUBBLES ELIMINATED!



in the
EXCEL-SO METER
CALIBRATING TANKS

Our specially built press brake for top and bottom cones eliminates sharp ridges where air or vapor bubbles accumulate.

Available in stationary or portable units with capacities of 50, 100, 200, 300, 500 or 750 gallons; 10, 15 or 20 barrels.

For: Refineries, Terminals, Pipelines, Tank Trucks and Loading Racks.

WARNER LEWIS
COMPANY
BOX 3096F - TULSA, OKLAHOMA

USE THIS COUPON

Send me full information on Calibrating Tanks
EXCEL-SO
Name
Street
City

SALES??

unrestricted

with MONCRIEF'S "all Fuels"

AIR CONDITIONING UNIT

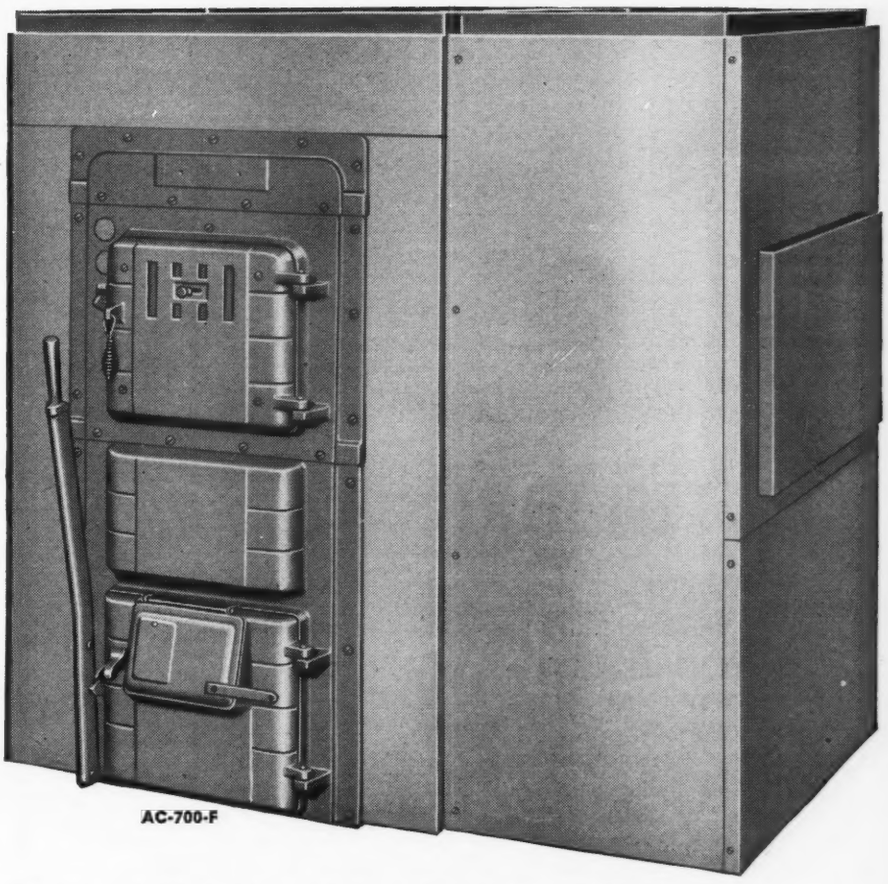
Gas? Oil? Coal? Stoker Fired?—any of these jobs are within your reach with Moncrief's new "all-fuels" air conditioning unit.

Here's a new design in a coal-fired air conditioning unit that can be readily converted at any time, even after installation, to burn oil, gas, or for stoker firing.

The excellent design and construction of the rugged, steel heating element, with long fire travel and large heating surface provide the necessary qualifications for the versatility of this unit.

A new cabinet that allows the full height blower compartment to be assembled at either side, is finished in smooth, glossy baked enamel.

Abundant air circulation is provided by the large, silent operating blower. Large filter area assures a long period of air cleaning without frequent replacement of filters. An automatic humidifier supplies the necessary moisture.



AC-700-F

THE HENRY FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

fueloil & oil heat

and technical data; Sales Promotion, for consumer bulletins, envelope stuffers and promotional literature; Erecting and Adjusting, with pertinent assembly instructions for each Mueller product. The binders' contents are further divided into sections by type of firing used and other classifications, with each section numbered and the pages within the section numbered to facilitate placing additional pages in their proper places.

Part of the new Mueller policy consists of placing a nominal charge on some of the sales promotional items, coincident with general practice. The binders have been designed for 23 hole punchings, to prevent loose-leaf pages from tearing out and to provide for quick insertions.

Perfex Assigns District Manager; Representative

PERFEX CORP., Milwaukee, Wis., recently announced assignment of Jack Luthe as district manager, Milwaukee office. Since 1946 he has been field engineer of the control division of the office. He joined Perfex in 1937, has worked in various departments in the plant, and joined the office of the inspector of Naval materiel in 1942. Mr. Luthe returned to the Perfex accounting department in 1944 and remained there until his association with the control sales department.

New duties also were assigned B. F. "Dutch" Werb, who now is special factory sales representative. Mr. Werb joined Perfex in 1940 and in 1944 became manager of vaporizing controls and accessories. In addition, he has acted as Milwaukee district manager since 1946. His new duties will encompass promotion of the company's new line of vaporizing oilburner controls being released for initial production, a control system for handfired plants and special assignments.

BETTENDORF *oil burners*

Conserve fuel oil by installing Bettendorf Burners. The advanced design of Bettendorf firing heads with the accurate control of air velocity at the mixing point of air and oil produces high efficiency and clean combustion using standard grades of oil or catalytic oil or blends—conserve with Bettendorf.

BETTENDORF OIL BURNER COMPANY

Marshalltown, Iowa

Pictured *above is one of the six 4,000 gal. Freuhauf trailers doing a job that normally would require 110 railroad tank cars. American Rolling Mill at Middleton, Ohio, needed large quantities of oil, but rail schedules within a 40-mile radius were slow, and tank cars scarce. O. B. Maxwell, president, The Maxwell Co., assigned the six trailers to the job and they have succeeded in meeting the Mill's requirements without interruption. They work around the clock, week in and week out and roll up an average of 120,000 miles a year.*

Officers Elected At Jefferson's Annual Meeting

AT THE ANNUAL stockholders' meeting of Jefferson Electric Co., held at the home office, Bellwood, Ill., on April 5, J. M. Bennan, vice president and G. W. Ziegler, vice president in charge of production were elected members of the board of directors. W. S. Minter, formerly assistant secretary, was elected secretary; V. E. Lee, assistant secretary.

Field Controls Names Two Representatives

TWO REPRESENTATIVES for Field barometric draft controls have been established recently by Field Control Div., H. D. Conkey & Co., Mendota, Ill., to augment the division's field sales force.

ON AUTOPULSE FUEL LIFTERS

From New, Greater Plant

Action of the Autopulse Electric Fuel Lifter is entirely automatic. It will provide a constant supply of fuel to sleeve, pot type or rotary oil burners where the main storage tank is below the level of the burner. Increased manufacturing facilities mean no delivery delays.

Controlled by fuel level. Operates only as needed. Exceptionally durable. Gives long service with little or no attention. Leader in this field for many years.

Models SW and SWH for pot type or rotary heater burners—Models S and SH for range oil burners.

They're good items to modernize heater installations. Cost, attractive—in fact, lowest in the field. New and improved facilities for manufacture are the answer.

Nearly two decades of leadership are your protection. Top quality — immediate service.

Write us direct for quotation, at

AUTOPULSE *Corporation*

LUDINGTON, MICHIGAN

DEALER OPPORTUNITY

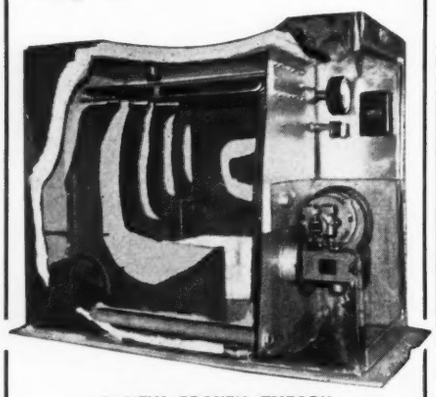
We have openings for a limited number of dealers

ACT FAST— ACT NOW — HURRY —

SEE WHY

RADIANT GLOW OIL HEAT

is a better buy. With its Radiant transfer surface — counter flow principle — down fired — all steel — wet base boiler — built-in heat exchanger — instantaneous hot water coil — expansion tank built in — burner completely enclosed with extended jacket — low compact modern design — low operating cost.



A NEW PROVEN THEORY OF HEAT TRANSFER

NO TUBES — NO FLUES JUST RADIANT HEAT

Can any other boiler burner unit offer all the advantages incorporated in Radiant Glow?

Get all the facts about Radiant Glow Franchise today. A limited number of valuable territories still open. This is an opportunity any live wire organization can not afford to let pass by.

Invite our representative to call. Let him tell you of the advantages Radiant Glow oil heat and an exclusive franchise has to offer.

CLIP AND MAIL

LEHIGH VALLEY SERVICE CO.
29 South Sixth St., Allentown, Pa.

Please send me literature on your oil burners—at no obligation to me.

NAME .....

STREET .....CITY.....

R. J. Millholland and W. F. Hirsch of Mercury Sales Co., Syracuse 2, N. Y., have been named to operate in the state of New York, exclusive of Greater New York City; Norris Blanchard Co., Omaha, Neb., in the states of Iowa and Nebraska.

Honeywell Announces Chronotherm Winners

WINNERS of automatic clock thermostats, given away by Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., at the Oil Heat Institute Exposition in Chicago, have been selected and notified. Ten Chronotherms were given away daily by drawings held on each of the four days of the convention and the controls have been sent to the winners, according to Arthur H. Lockrae, vice president, heating controls division.

The automatic thermostats, with a total value of $1,400, were awarded to persons who attended the Show and filled out cards in Honeywell's booth to participate in the drawings. Winners were from twelve states and Canada and included two brothers.

Scully Adds Fil-Gard To Line of Fill Signals

VENTALARM FIL-GARD, developed by Scully Signal Co., Cambridge, Mass., is now available for most popular makes of automobiles for attachment to the gas tank fill pipe to prevent gasoline spills due to blowback, overfilling, temperature expansion and to prevent theft by siphoning. Operating on the same principle as the Ventalarm signal for fueloil storage tanks, Fil-Gard produces a continuous whistle while the gasoline tank is being filled and stops when the proper level in the tank is reached.

Installation is represented as being quick and easy. Models are available for ten popular makes of cars and models for other makes are being prepared.

Sid Harvey Opens Eleventh Branch

A LEASE for another Sid Harvey branch, to be located at 115 Billings Rd., Quincy, Mass., has been signed, according to Winthrop A. Mandell, president, Sid Harvey of Mass., Inc. The new store will provide a local pick-up point for oilburner service parts and rebuilding services in Quincy and vicinity.

The new location is designed to relieve congestion and overcrowding at the main store in Allston, Mass. The Quincy branch is the eleventh Sid Harvey store in the east and was scheduled for a middle of May opening.

Norge Advances Date For Hammond Operation

OUTPUT of heating equipment from the plant recently acquired at Hammond, Ind., by Norge-Heat Div., Borg-Warner Corp., Detroit, Mich., is expected to

KRAISSL

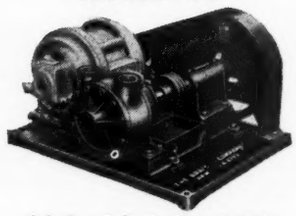
PUMPS AND SEPARATORS

FOR OIL BURNER SERVICE

CLASS 50 LIGHT OIL PUMPS
DIRECT DRIVE FOR
#1 TO #5 OILS INCLUSIVE

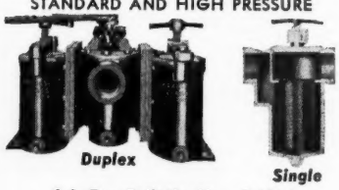
Ask For Bulletin A-1330

CLASS 60 HEAVY OIL PUMPS
REDUCTION DRIVE
FOR HEAVY OIL



Ask For Bulletin No. A-1193

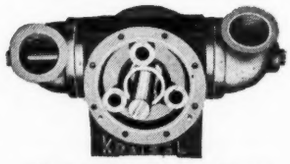
CLASS 72 STRAINERS AND FILTERS
SINGLE AND DUPLEX
QUICK CLEANING
STANDARD AND HIGH PRESSURE



Duplex *Single*

Ask For Bulletin No. A-1214

CLASS 80 TRI-ROL PUMPS
INTERCHANGEABLE SERVICE
BOTH LIGHT AN HEAVY OILS
TANK TRUCK AND BULK STATION



Ask For Bulletin No. A-1366

295 WILLIAMS AVE.

KRAISSL **THE KRAISSL COMPANY**
HACKENSACK, N. J.

For Today's MORE COMPLETELY AUTOMATIC Vaporizing Oil Burning Furnace...

It's YOURS--with this SIX-in-ONE UNAPAC

Provides for

1. "MAGIC PILOT" OIL CONTROL
2. THERMOSTATIC TEMPERATURE CONTROL
3. BONNET LIMIT CONTROL
4. BLOWER OR FAN CONTROL
5. MODULATING DRAFT CONTROL
6. SUMMER AIR CIRCULATION

Check NOW on the amazing control versatility of this new UNAPAC. Its streamlined compactness is an important eye-appeal factor in selling. But even more important you'll save money . . . avoiding expensive and intricate wiring, reducing factory labor and material costs, cutting field installation expense and problems to a minimum.

UNAPAC contains wiring for all the Automatic Control functions, plus provision for manual operation in case of current failure. It CAN'T be mounted wrong, for only THREE mounting holes are required — no brackets. Just insert bulb in plenum chamber, connect to power line and low voltage wires (for thermostat).

YOUR Vaporizing Oil Burning Furnaces deserve this truly modern, simplified UNAPAC. BE FIRST WITH THE LATEST . . . Write for details on the new UNAPAC today!

Safety Oil Control

Standard, in many variations, on leading Vaporizing Oil Burning Appliances.

AUTOMATIC PRODUCTS COMPANY

2458 North Thirty-Second Street, Milwaukee 10, Wisconsin

DEPENDABLE *Oil Controls*

042

DESIGNED TO ELIMINATE SERVICING

start by the end of May, instead of midsummer, as originally announced. C. S. Davis, vice president and general manager, says the earlier date is possible because of rapid machinery installation progress at the site.

The company initially will produce recently developed convertible winter air conditioning furnaces and gun type oilburners. Later plans, however, call for production in the 150,000 sq. ft. plant of the full line of Norge-Heat products. These include floor furnaces and oilburning water heaters.

New Jersey Outlet Named By Mueller

CLEWELL EQUIPMENT CO., Montclair, N. J., has been appointed exclusive distributor in southeastern New York and northern New Jersey for the Climatrol line, made by L. J. Mueller Furnace Co., Milwaukee, Wis.

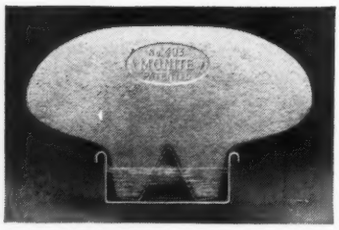
The Clewell company is headed by R. L. Clewell, who, before resigning to start his own business last fall, was heating division manager, Richmond Radiator Co.

Mechanical Heat & Cold Forms Wholesale Outlet

HARVEY A. SHULER, president, Mechanical Heat & Cold Co., Inc., announced the formation on April 1 of Temp-Matic Wholesalers, Inc., to handle the parent company's wholesale business. Temp-Matic has been franchised to sell direct to dealers in southeastern Michigan, Westinghouse package air conditioners, York-Heat line of oilfired heating equipment, J & C furnaces, Afco overhead units, Jud Whitehead, Security and Evans water heaters, Quick-Heat furnaces, Uniflow pumps and products manufactured by Silent Korth, Viking, Hotstream and others.

A. O. Frederick, former sales manager of the wholesale division, will be in charge as general sales manager of the new firm, assisted by Dewey Hildebrecht, former field service engineer for York-Heat. Headquarters will be located at 12300 Hamilton, Highland Park, Mich. Mechanical Heat & Cold, Inc., according to Mr. Shuler, will continue to handle contract sales of installed heating and air conditioning.

J. W. Owens, *executive vice president, Mercoid Corp., Chicago, holding two of a boat load of kingfish he helped catch at San Carlos Bay, Fort Meyers Beach, Florida, during February.*



New Design Plates!

Monite ceramic defusion plates (originated by Monmouth), acid and heat resisting, are now redesigned for greater efficiency and durability. Give rapid water absorption, free vapor defusion, easy cleaning. In evaporating capacity, each plate equals 50 sq. in. of water surface.

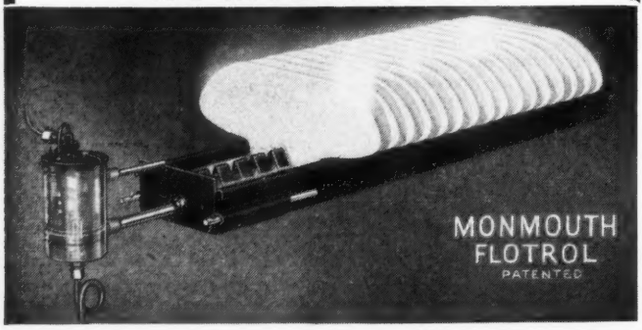
A Complete Line for all Purposes:

- **FLOTROL—the LEADING Humidifier for warm air or air conditioning.**
- **MICRO-FEED—the simple, low-cost control for drip feed operation.**
- **Monmouth HUMIDITY CONDITIONER, gas-operated, for all radiator heated buildings.**

Bulletin and prices on request.

THE CLEVELAND HUMIDIFIER CO.
7808 Wade Park Ave., Cleveland 3, Ohio

MONMOUTH HUMIDIFIERS



SELL

TROUBLE-FREE HEATING!

When you offer ANCHOR OIL BURNER, you offer heating satisfaction at its best!

Built to perform with a minimum of attention . . . priced to sell within reason . . . ANCHOR is the ideal conversion unit.

You profit well on its sale. And, because you seldom need to make free service calls, you hang on to those profits.

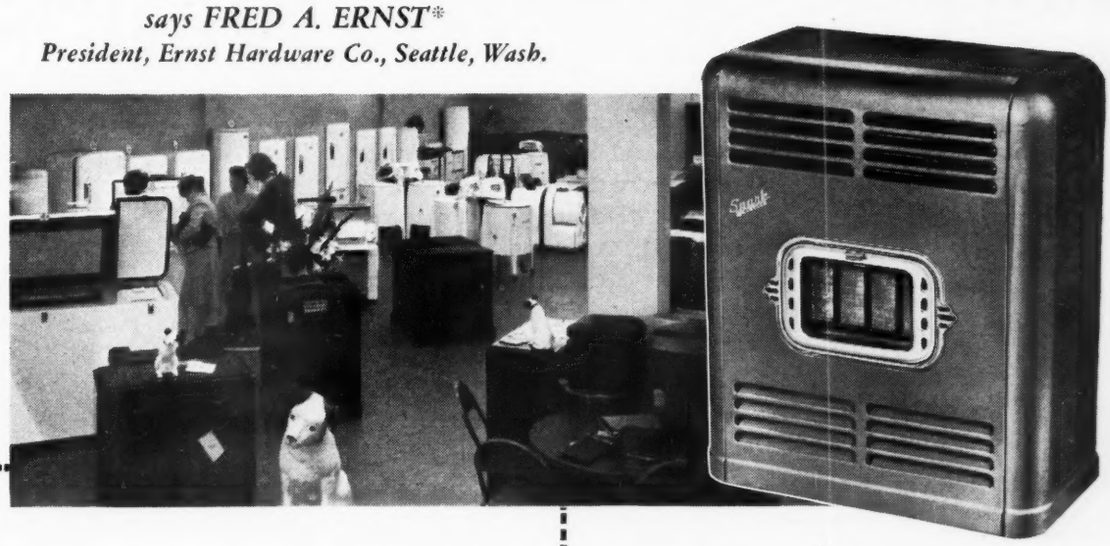
Write today for details and prices on the trouble-free Anchor Oil Burner conversion unit. Anchor Division, Stratton & Terstegge Co., P. O. Box 311, New Albany, Indiana.

ANCHOR *the manufacturers of*

ANCHOR OIL BURNER

"SPARK IS FAR SUPERIOR to any other oil heater we have handled"

*says FRED A. ERNST**
President, Ernst Hardware Co., Seattle, Wash.



* *Here's what Mr. Ernst says:*

"We have handled thousands of Spark oil burning heaters since we took on the Spark franchise over ten years ago. We feel that it is the best oil heater made, and far superior to any other oil heater we have handled. It is completely trouble-free. It's like sitting in front of an open fireplace when you have a Spark oil burning heater in your home. It is very economical to operate . . . no changing of wicks . . . no odor. The fuel oil can be stored outside the house. Altogether, Spark is as clean as a whistle."

Fred A. Ernst
President, Ernst Hardware Co.
Seattle, Washington

YES, Spark dealers everywhere agree that Spark oil burning heaters *are* superior . . . that their superior features result in sales and profits. For customers like the pleasing appearance of the Spark heater, and the efficient, low-cost operation (Spark oil burning heaters are approved by Underwriters' Laboratories to burn *No. 1, No. 2 and No. 3 fuel oil).*

FRANCHISES AVAILABLE

In the growing business of the Spark Stove Co., Inc., there is still room for a few more progressive dealers. Here's a field where honest sales effort will pay big dividends. If *you'd* like to join other dealers in the profits from Spark oil burning heater sales, write to the Spark Stove Co., Inc., 2619 East 12th Street, Oakland 1, California, saying "I'm interested." A coupon is attached for your convenience.

SPARK OIL BURNING HEATERS

A product of
SPARK STOVE CO., INC.
OAKLAND 1, CALIF.

Yes, I'm interested. Without obligation to me, please tell me how I may obtain a franchise for Spark oil burning heaters.

*Name*_____

*Firm Name*_____

*Street and Number*_____

*City and State*_____

(Clip and mail to Spark Stove Co., Inc., 2619 East 12th Street, Oakland 1, Calif.)

Don't sell heating equipment alone...

Sell

POSITIVE

PROTECTION

against fuel shortages

Sell

ROCK-BOTTOM

ECONOMY

in cost and operation

Sell

Fiske ALL FUEL

Furnaces

with the sensational 15-minute change-over feature

for oil OR coal!

Now you can close those hard-to-crack prospects who want automatic heat—but are hesitating because of fuel scarcities. Get the facts about this and other money-makers in the complete FISKE LINE of Oil and Gas Home Heating Equipment.

Exclusive Fiske Franchise gives you year-round LOCAL ADVERTISING over your firm name AT ABSOLUTELY NO COST TO YOU. No large unbalanced inventory required. Stock only WHAT you need WHEN you need it! Send coupon for complete details TODAY.

FISKE PRODUCTS, INC.
Mt. Kisco, New York
Please send full information on Fiske Dealer Franchise and the Fiske Line.

Name .....
Firm Name .....
Address .....
City & State .....

Honeywell Division Holds Air Conditioning School

A TWO-SESSION school, outlining latest developments in automatic controls for air conditioning equipment, was held in New York April 27 and 29 by the international division, Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.

Approximately fifty men from the international divisions of Carrier, York Corp., General Electric and Westinghouse, attended the school conducted by O. F. Quist. The first session consisted of a general introduction to automatic controls and a discussion of electrical control systems. Pneumatic controls were described at the second meeting.

U. S. Radiator Hits Sales And Profits Peak

SALES of United States Radiator Corp., Detroit, Mich., for its fiscal year, ending January 31, 1948, totalled $23,054,586 an increase of 28% over last year on sales and net profit showed a gain of 35% to $1,606,521. Both were the largest in the company's history.

Wesley J. Peoples, chairman of the board and president, revealed the figures in his annual report to stockholders and announced also that during the year manufacturing facilities, distribution and sales organizations were improved and strengthened, new products developed and plans formulated to expand the activities of the research and engineering division.

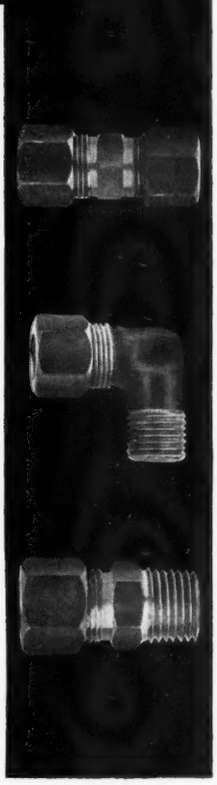
Chrysler Airtemp Prepares Book For "Family Day"

A BOOK, prepared by Airtemp Div., Chrysler Corp., Dayton 1, Ohio, for distribution at its recent "Family Day" celebration, contained a comprehensive story of the division and its operation.

Establishment of Airtemp was traced from its beginning in June, 1936, to the present operation, offering a complete line of domestic heating and air conditioning equipment for all types of installations. Numerous photographs show interior and exterior views of plants and factories, assembly lines, laboratory and research facilities, shipping and loading sections. Included also were pictures of each type of unit offered by the division.

your most dependable source

COPPER TUBE FITTINGS



a complete line of brass fittings for copper tubing installations for gas and oil line use

BRASS FITTINGS OF MERIT CS

write for catalog H

C-S

BRASS MFG. CO.

148 West 62nd St. New York 23, N.Y.
PLaza 7-2295

DEALERS WANTED

for

IRON FIREMAN

Automatic Heating and Power Equipment

Excellent Territories Open for Sale of Coal Stokers, Oil and Gas Burners, Automatic Furnaces and Boilers for Coal, Oil and Gas

IRON FIREMAN now has available exceptional business and profit opportunities for aggressive organizations and individuals experienced in modern merchandising. With expanded line of coal, oil and gas equipment, excellent territories are now open in large and small cities and towns.

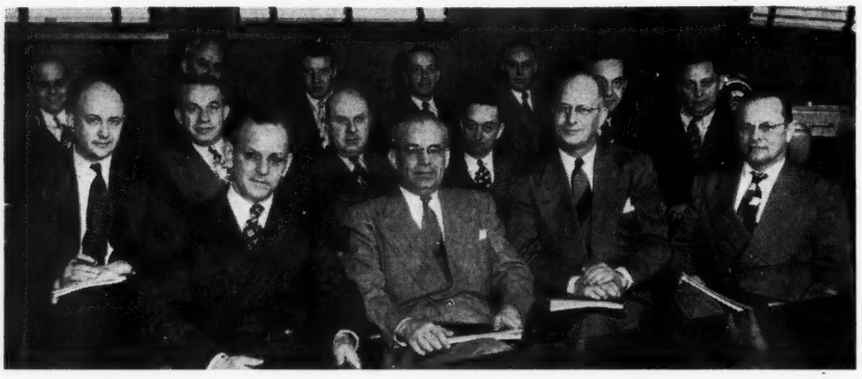
Iron Fireman heating and power equipment is everywhere known for its quality and performance. Hundreds of thousands of satisfied users and over 20 years of steady advertising in leading national magazines, newspapers and other media have made Iron Fireman an outstanding name in the automatic heating and power field. Iron Fireman builds good equipment—highly *salable* equipment.

Dealers selected will receive strong company backing, with excellent local advertising, merchandising and engineering assistance. A thorough sales training course for retail salesmen available for both individual and group instruction.

In writing, please state location desired and give us information about your organization or yourself; experience in direct sales or distribution and present or contemplated sales organization and facilities.

IRON FIREMAN MANUFACTURING CO.

3283 West 106th Street, Cleveland 11, Ohio



Sales representatives *of Nu-Way Corp., Rock Island, Ill., shown at the annual sales meeting held at the factory late in January in the recently completed conference room. Front row: (l. to r.) O. K. Gipple, Nu-Way vice president and treasurer; L. E. Wood, L. A. Holliday, W. F. Klockau, Nu-Way president. Middle row: R. F. Ashton, J. J. McCarthy, A. E. Olson, M. A. Davies, A. L. Swartzmiller, H. E. Doyle. Back row: P. J. Ayton, W. W. Stuart, R. J. Bender, R. S. Phillips, A. L. Addis.*

Brown Electric Company Moves To New Location

AN ANNOUNCEMENT made recently by Brown Electric Co., Forest Hills, N. Y., listed 96-08—72d Avenue as its new office location. The firm markets oilburning boiler-burner units and oilfired domestic water heaters.

C & L Increases Production Of Water Heater Burner

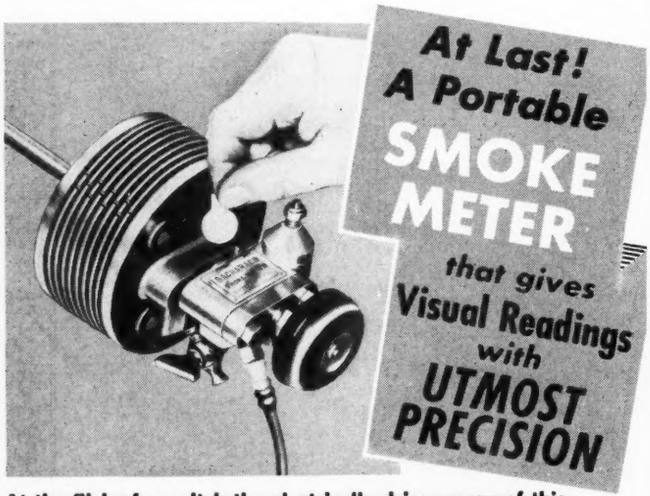
PRODUCTION of burners for Hoffman water heaters has increased from 8 to 110 units per hour since installation late last year of a specially-designed hydraulic multiple head drill, capable of drilling 148 holes simultaneously. Clayton & Lambert Mfg. Co., Louisville 10, Ky., perfected the drill, which is thought to be the only one of its kind in operation.

Formerly, each burner hole was drilled separately and positioned to the center of a recess cast in the burner. Imperfections of castings resulted in imperfectly spaced holes and the rough surface on castings was hard on drills. With the new drill, burner faces are ground to bring all the lugs to one plane and the blank burner is placed on the carriage of the drill press to be pushed up by hydraulic pressure to the drill plate.

G.E. Again Reduces Prices Of Apparatus Dept. Products

THE SECOND major reduction in prices of certain lines of Apparatus Department products has been announced by General Electric Co., effective April 16. Less sweeping than the three-to-ten percent reductions made by G.E. on January 1, the new price cut is expected to effect a saving of nearly ten million dollars to the company's customers.

Products affected by the new reduc-



At the flick of a switch the electrically-driven pump of this scientifically-designed smoke meter draws an accurately-controlled sample of combustion gases from the flue pipe, and automatically makes a "soot record" on a paper test disc.

These test discs can be filed as positive and permanent records of test results.

The soot content of the gas sample as recorded on the test disc is measured against an ingenious "scale of soots" which is furnished with the instrument. This scale breaks down the full range of permissible smoke conditions of residential oil heating units into ten numbers.

For utmost portability the complete outfit, consisting of sampling unit, suction pump, "scale of soots," and 100 test discs, is securely packed in a handsome metal carrying case measuring 15" x 9" x 6".

Write for descriptive Leaflet 746 today.

BACHARACH Industrial Instrument Company
7000 Bennett Street · Pittsburgh 8, Pa.

Rajah
SPRING SNAP TERMINALS
FOR OIL BURNER SPARK PLUG CONNECTIONS
• • •
Standard Equipment on the Majority of Oil Burners
• • •
Made in Two Styles
CRIMP TYPE and SOLDERLESS

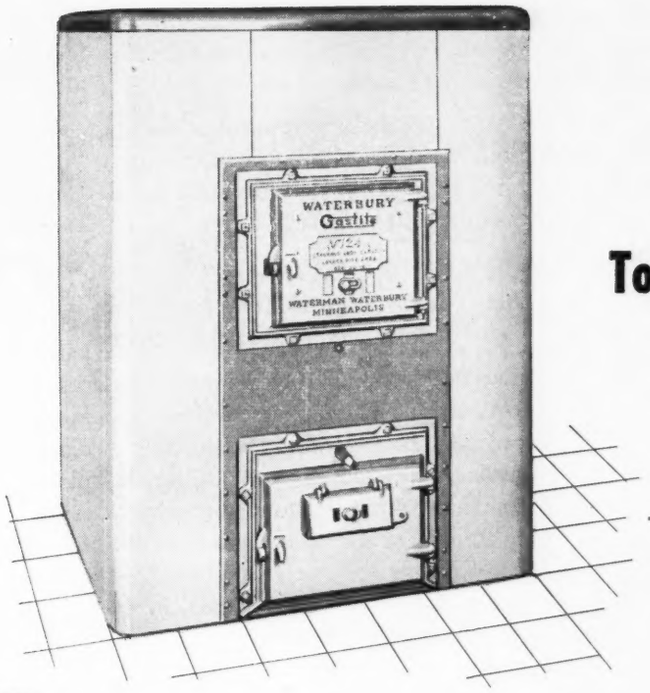
Code No. S/S No. 11 Code No. S-SOS No. 11

SEE US AT BOOTH NO. 218
OIL HEAT EXPOSITION

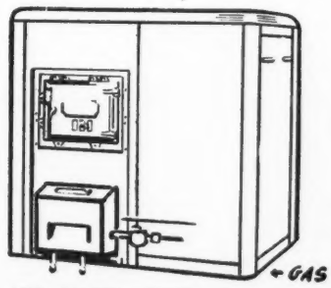
THE RAJAH COMPANY
Bloomfield, New Jersey

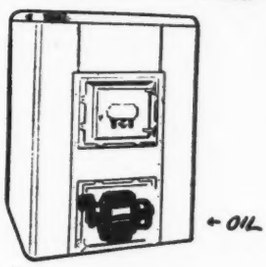
Adaptable to ANY Fuel

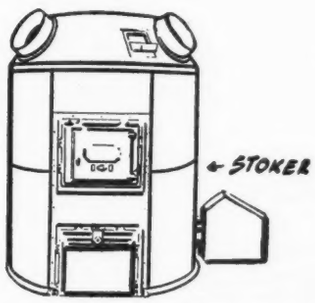
The 700 Series



To Meet Today's Problem







Waterbury

700 Series Coal-Fired Units are made in both round and square gravity models and in a complete winter air-conditioner. All of these units are equipped with the famous Waterbury Gas Tight body—and they convert easily to oil, gas or stoker. As coal-fired units, or converted, they live up to Waterbury's standards of efficiency.

It's What's Under the Casing that Counts!

THE WATERMAN - WATERBURY COMPANY

1171 JACKSON ST. N. E. **MINNEAPOLIS 13, MINN.**

tion include fractional horsepower motors, transformers and switchgear used by electric utilities and industrial plants.

Midwest Representatives For Independent Oilburner

TWO APPOINTMENTS, made by Independent Oil Burner Corp., Jamaica, N. Y., established midwest outlets for the company. "Chick" Meehan and Lester Baughman of F. W. Seiffert & Son, Chicago 22, Ill., will represent the line in northern Illinois and Indiana, the states of Wisconsin, Minnesota and Iowa.

Ray and Ralph Goebler of R. H. Goebler Co., St. Louis, Mo., have been named to cover southern Illinois, the states of Missouri, Oklahoma, Nebraska, and Kansas.

Toridheet Distributor Opens Cincinnati Showroom

HESCO CORP., recently announced as the Cincinnati, Ohio distributor for the Toridheet Div., Cleveland Steel Products Co., Cleveland, Ohio, opened a completely new establishment on April 22.

A feature of the opening ceremonies was a talk on combustion by B. A. Peterson, B. A. Peterson Co., Dowagiac, Mich., who discussed the inter-relation of combustion chambers, nozzles, electrodes and agitation for properly burning catalytic fueloils. He stressed the importance of testing all jobs.

W. L. Troescher, president of Hesco, pronounced the meeting a success and stated that plans are being made for a similar meeting in August.

Duo-Therm Water Heaters Under Ten Year Protection

A WARRANTY and 10-year protection plan for Duo-Therm water heaters has been announced by Motor Wheel Corp., Lansing, Mich. Under terms of the plan, a purchaser is entitled to repairs or free replacement of all parts proved to be defective during the first year of installation. During the first five years, he is entitled to a replacement heater of comparable capacity and design without charge in the event of tank failure established to the manufacturer's satisfaction.

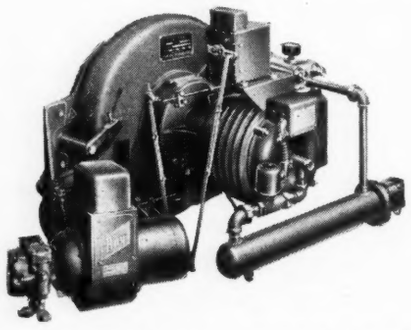
From the sixth through the tenth year, the plan provides for supplying a new replacement heater of comparable design and capacity on a liberal exchange basis in the event of tank failure, provided satisfactory evidence of tank failure is furnished. The plan is retroactive to January 1.

Hays Corporation Adds To Michigan City Plant

A NEW BUILDING, dedicated by Hays Corp. in ceremonies held recently at the Michigan City, Ind., plant, will be devoted exclusively to the fabrication of panel boards for automatic combustion control, instruments and controllers used in processing plants. Additions and changes in the main plant also were completed recently to accommodate increased office personnel.

The additions became necessary because of a steady growth in demand for Hays automatic combustion control and to make room for a newly-added line of electronic instruments for industrial use.

The OIL BURNER with RAY an INTERNATIONAL REPUTATION



ANOTHER RAY CHAMPION

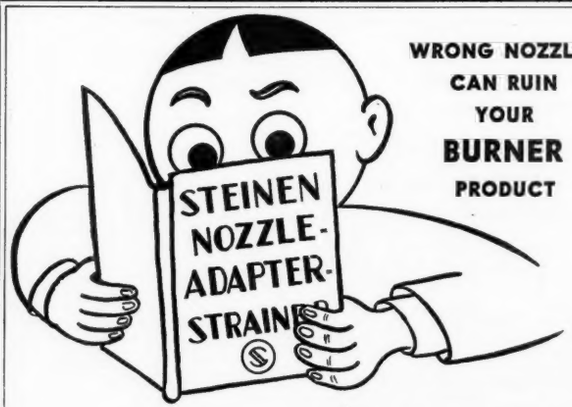
- Fully automatic heavy oil burner, Type ARJP
- Straight electric ignition with diesel oil burner, eliminating need for gas
- Available in ten sizes, 16 to 700 boiler H.P.
- Years of continuous service throughout the world attest to the reliability of this Ray Champion.

There is a Ray Burner for Every Heating Purpose

RAY OIL BURNER CO.

401 BERNAL AVE · SAN FRANCISCO

A FEW OPEN TERRITORIES STILL AVAILABLE IN THE U.S.A.



WRONG NOZZLES CAN RUIN YOUR BURNER PRODUCT

What's Behind This Trade Mark

NOZZLES A STEINEN PRODUCT

STRAINER A STEINEN PRODUCT

ADAPTER A STEINEN PRODUCT

Why it's so important to everyone who uses STEINEN products because it means better burner performance.

Dependable year in, year out. Backed by 40 years experience in the manufacturing of engineered products for some of the leading manufacturers in the country.

WM. STEINEN MFG. CO.
Newark 5, N. J.

T-23 OIL HEATING PACKAGE SET

Automatically Yours For Better Temperature Control

GENERAL CONTROLS
801 ALLEN AVENUE GLENDALE 1, CALIF.

FACTORY BRANCHES: BIRMINGHAM (3) BOSTON (16) CHICAGO (5) CLEVELAND (15) DALLAS (2) DENVER (2) DETROIT (4) HOUSTON (2) KANSAS CITY (2) NEW YORK (7) PHILADELPHIA (40) PITTSBURGH (22) SAN FRANCISCO (7) SEATTLE (1) • DISTRIBUTORS IN PRINCIPAL CITIES

MANUFACTURERS OF AUTOMATIC PRESSURE, TEMPERATURE & FLOW CONTROLS

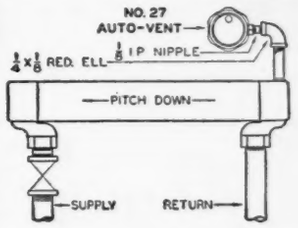
WRITE FOR FREE DESCRIPTIVE LITERATURE

HOW TO GET PERFECT CIRCULATION in Hot Water Radiators and Convectors

AUTO-VENT AIR ELIMINATORS REALLY DO A JOB!

As air accumulates in radiators or pipes, it is AUTOMATICALLY VENTED when you use these inexpensive No. 27s. Your customer gets better heating and saves fuel.

AUTO-VENTS work equally well on convectors, baseboard radiation, panels, radiant heating coils, etc. — NO AIR CHAMBER REQUIRED. Good for pressures to 50 lbs. *See your jobber, or write us direct.*

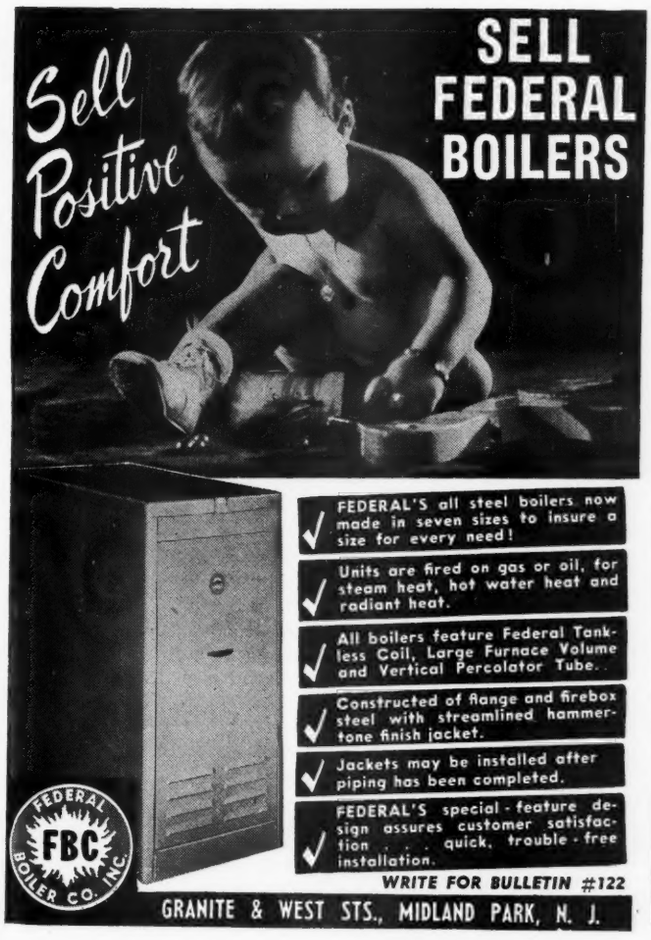


SIMPLE AS A-B-C

Detailed drawing of No. 27 Auto-Vent Air Eliminator operating on convector radiator. Auto-Vents used on other types of jobs are just as easily installed — and no attention required.

MAID-O'-MIST INC.
3221 N. PULASKI RD.
CHICAGO 41, ILLINOIS

AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS



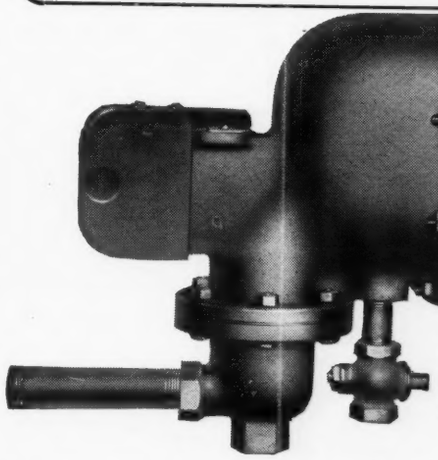
- ✓ FEDERAL'S all steel boilers now made in seven sizes to insure a size for every need!
- ✓ Units are fired on gas or oil, for steam heat, hot water heat and radiant heat.
- ✓ All boilers feature Federal Tankless Coil, Large Furnace Volume and Vertical Percolator Tube.
- ✓ Constructed of flange and firebox steel with streamlined hammertone finish jacket.
- ✓ Jackets may be installed after piping has been completed.
- ✓ FEDERAL'S special-feature design assures customer satisfaction . . . quick, trouble-free installation.

FEDERAL BOILER CO. INC. FBC

WRITE FOR BULLETIN #122

GRANITE & WEST STS., MIDLAND PARK, N. J.

Webster Boiler Protector Now — Immediate Delivery



Webster Boiler Protector Model 34 C-1 illustrated, with electrical cut-out, for automatic heat. Model 34 is for hand-fired boilers.

Here—now! . . . Protection against accidental low water in low pressure heating boilers. The service-proven Webster Boiler Protector—the *only* protector incorporating a powerful hydraulically actuated operating mechanism to deliver maximum capacity instantly—is again available in quantity. Phone or write Webster Representative today for quick delivery.

Bulletin on request, address Dept. **F-5.**

WARREN WEBSTER & Co., Camden, N.J.
Representatives in principal Cities : : : Est. 1888
In Canada, Darling Brothers, Limited, Montreal

BY THE MAKERS OF *Webster* HEATING SYSTEMS

New Products

Evans Releases New Line Of Oilfired Furnaces

FOUR MODELS of automatic oilfired furnace units, recently announced by Evans Products Co., Plymouth, Mich., include three packaged furnaces and a new conversion burner. Model 388 furnace unit, illustrated with blower mounted on the right side of the casing, is designed for use in small and medium-sized homes as a winter air conditioner. It incorporates a squirrel-cage type blower for circulating heated, filtered air in the winter and providing air circulation in the summer. Its bonnet output is 82,000 Btu/hr. and it measures 33½" x 56" in floor space, 55"high. Blower assembly can be mounted on either side, underneath and

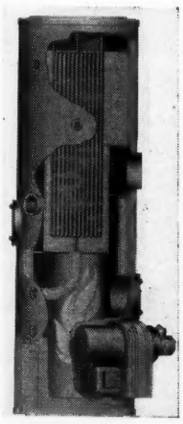
in the rear or the unit may be operated as a gravity heating system.

Model 378 forced air furnace is a utility room furnace, developing a bonnet capacity of 82,000 Btu/hr., and measuring 23¾" x 33¼" in floor space, 63" high. Model 458, floor furnace, also is being produced to deliver 50,000 Btu/hr. Entire cabinet is only 24" wide, 39" deep.

The conversion burner, model 598, is of the vaporizing type, featuring a telescope air duct, allowing all external controls to fit closely against the furnace. The burner has a high fire rate of 1 gph.

York-Shipley Unit For Radiant Heating

YORK-HEAT PB7-R oilfired boiler-burner unit, developed by York-Shipley, Inc., York, Pa., has been designed especially for use with radiant heating installations. The unit provides low temperature water for heating, high temperature water for domestic use and has a built-in air chamber for expansion. There are two boiler sections—a lower, outer jacket, from which the low temperature water is tapped, and an upper boiler section, which supplies domestic hot water by means of a long, instantaneous coil.



Completely self-contained, except for the burner which is shipped separately, the unit is made in sizes for maximum heat output of 81,000 and 110,000, with rated domestic hot water coil capacity 5 gpm for both models. Units supply water for radiant heating at controlled temperatures of 100° to 130° F. If desired temperatures can be varied as low as 80° and as high as 200° F., permitting the boilers to be used also with baseboard radiation installations.

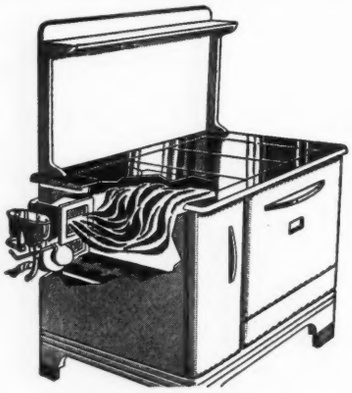
Profits!

Through the

SUPER-THERM

Combination

OIL BURNER



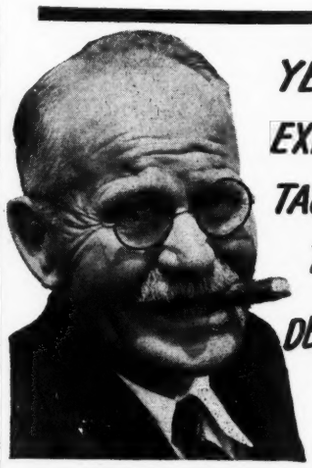
SALES prospects for this modernizing, easily installed oil burner are *all* owners of gas, wood and coal stoves and ranges. Super-Therm fits any size stove, front or rear —will last a lifetime—will not soot or smoke—has automatic safety features. Write now for details and *dealer profit* facts.

THERM OIL BURNER CO.

Pioneers of the Oil Burning Industry

2105A Westlake Avenue

SEATTLE 1, WASHINGTON



YEARS OF EXPERIENCE TAUGHT ME TO USE DEPENDABLE GAUGES. THAT'S WHY I RECOMMEND ONLY

LEVELOMETER

Tank Gauges

These trustworthy gauges eliminate guess work and offer convenient remote readings...as well as assuring greater protection against overflowing oil tanks. Consequently, Levelometer tank gauges save service calls and offer greater customer satisfaction all around. Little wonder, Levelometer is the choice of dealers who insist upon dependable oil tank gauges.

Midget LEVELOMETER
Lowest priced Remote Reading Gauge built

"Liquids Worth Storing Are Worth Measuring"

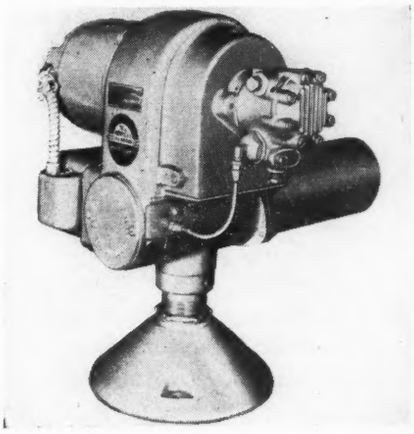
THE LIQUIDOMETER CORP.

36-19 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

An air chamber built into the top of the boiler accumulates air released from the water, eliminating the need for a separate expansion tank. A circular baffle arrangement travels hot combustion gases through long, narrow, circular passages between the inner and outer shell walls.

Howell Adds Two Models Of Gun Burners To Line

TWO MODELS of gun type oilburners have been added to its line by Howell Oil Burner Co., Dixon, Ill. Model DHP-1, illustrated, is supplied with a firing range



from .75 to 1.35 gph; model DHP-10, from 6 to 10 gph. These new models are in production, supplementing previously announced models DHP-2 and DHP-5, with firing rates of 1.20 to 2 gph and 2 to 5 gph, respectively.

Howell burners are equipped with a combustion head which contains no moving parts, designed to permit the burners to use catalytic fueloil at normal pressure, without adjustments in the field.

Baer Boiler Tube Plug and Tool

A PATENTED tool and plug now available from Baer Tube Plugger, Queens Village 8, N. Y., is designed to plug leaks in boiler tubes, leaving the entire heating surface of the tubes effective. Chucks, which hold plugs, are in four lengths, for 2½", 3", 3½" and 4" boiler tubes, and include five 2' extension handles and a lever bar. A 6 or 15 volt light, worked from a transformer plugged into a 110 volt outlet, furnishes visibility to position the plug under the leak.

In operation, a plug of one of four available sizes is fitted into the chuck, extension handles and lever bar attached and the tool slid into the tube until the

NOW MAKE EVERY TEST MR. HEATING SERVICEMAN!

DWYER TRANSPARENT COMBUSTION TEST SET

DO ALL THESE . . .

- Determine correct CO_2 content
- Check for air leaks
- Adjust air controls
- Know draft conditions
- Level burners and controls accurately
- Find stack temperature readings

The new **DWYER Combustion Test Set** contains every instrument necessary to get your heating jobs functioning efficiently and correctly. Here at last are the tools you need . . .

IMPORTANT—For those who desire other styles of components, DWYER has a wide range of Test Sets. Write for new literature describing the complete assortment.

The new DWYER CO_2 Indicator— Simple and fast . . . helps you adjust air controls for highest possible CO_2 reading without a smoky fire.

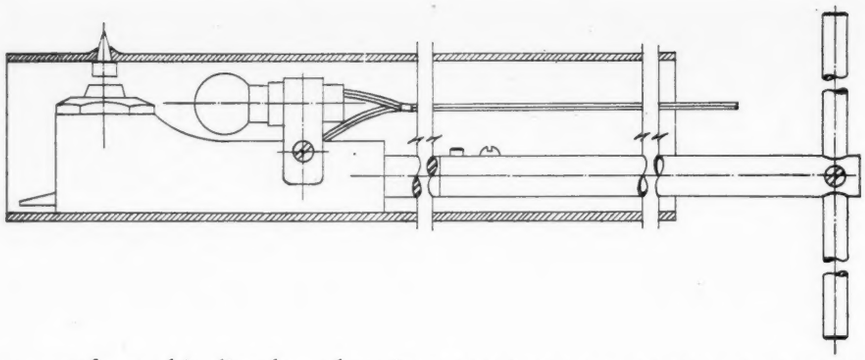
The improved DWYER Visi-Draft— Precision draft gage for draft reading critical to one-hundredth inch. Built-in circular level for setting burner and control valves. Mounted for convenient use right in case.

The DWYER Stack Thermometer— Pencil type, range to 900° F., withstands shock, has magnifying lens front.

Combustion Test Set No. 600-181-M— Furnished with durable carrying case, all accessories and instructions $33.50

F. W. Dwyer Mfg. Co.

315 South Western Avenue, Chicago 12, Illinois



stream of water hits directly on the point of the plug. Turning the lever bar raises the plug into the leak hole and it is screwed in until the plug is driven up against the wall of the tube.

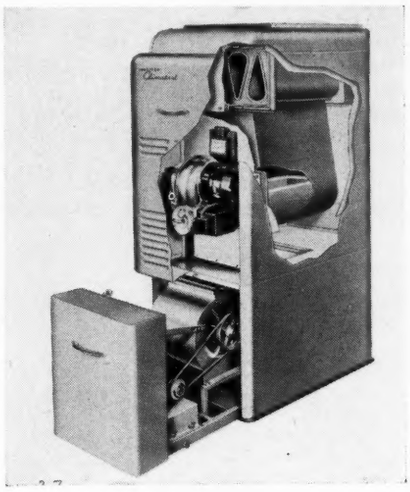
Home Aluminum Announces Two Oilfired Space Heaters

MODEL NOS. 535 AND 14 oilfired console heaters, made by Home Aluminum and Bronze Co., Piqua, Ohio, use either kerosene or No. 1 fueloil and can be furnished with or without reservoir tanks. Model 535, the larger size, produces 51,000 Btu/hr. when operating at maximum capacity and measures 39" high, 36" wide, 20" deep; model No. 14 has been designed for cottages, trailers, offices and similar small areas, and measures 32" high, 14" wide, 19" deep. Exterior jackets are made of sheet aluminum, with a steel frame and "L" type steel horizontal heat chambers.

Heat distributing fans are mounted inside heater cabinets to provide maximum circulation and eliminate drafts. A self-levelling oil control valve is furnished as standard equipment.

Mueller Type 209 Features Roll-a-Drawer Assembly

A RECENT ADDITION to the Climatrol line of furnace-burner units, manufactured by L. J. Mueller Furnace Co., Milwaukee 7, Wis., is type 209 oilfired winter conditioner, in sizes with input capacities of 60,000, 90,000 and 120,000 Btu/hr. A choice of blower sizes provides a varied range of applications, including warm air panel heating. All sizes may be fired with Mueller's vaporizing burner, or the two larger sizes may use the pressure atomizing burner. Type 209 is

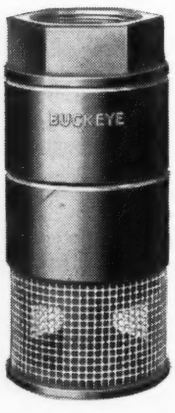


equipped so that the oilburning assembly is interchangeable with a specially designed packaged gas burner.

The Roll-a-Drawer feature, rolls out of the unit on ball-bearing rollers, exposing the entire blower assembly for

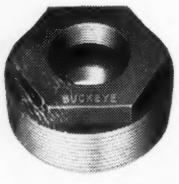
"IN THE TANK" ACCESSORIES by Buckeye

Oil men know this about Buckeye Oil Burner Accessories: That the name itself signifies quality, that accessories bearing this name can be installed and forgotten, that fine performance and long life are *built into* every Buckeye fitting. Here are a few selected from the Buckeye line:



← No. 439 Foot Valve
Double poppet. Seats, hand-lapped to disc for perfect accuracy, are the only moving parts. All brass construction. Full flow.

No. 438 Foot Valve →
Single poppet. Retain accuracy after years of use. Full capacity for unrestricted flow.

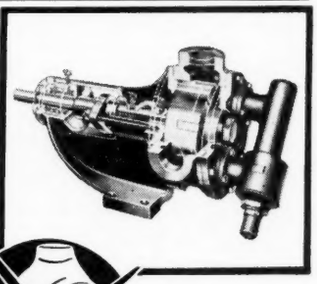


No. 441 Tank Bushing
Made of iron. Full length standard taper pipe threads. Convenient size hexes for quick installation.

For oil burner installations, Buckeye also makes fill caps, fill boxes, vents, sludge pumps, strainers, check valves and shut-off valves.

BUCKEYE IRON & BRASS WORKS, Dept. F
P. O. Box 883, Dayton 1, Ohio

VIKINGS IN... Substitutes ..OUT!



The substitute era of war-time shortages is drawing to a close. Once again Viking, the pump built *for* your job, is becoming more readily available. A few are still on the shortage list. However, every effort is being made to vastly increase production of these models. The result is progressively earlier schedules.

Production is up—away up—higher than at any time in the company's record. But please don't forget, quality, at no time, has been sacrificed for higher production.

Buy Viking with assurance of the same dependable "gear within a gear" quality. First in the rotary pump field. Write today for free bulletin 1500EE.

See Our Catalog In SWEETS

Viking PUMP COMPANY
Cedar Falls, Iowa

NEW! REVOLUTIONARY! MODERN!

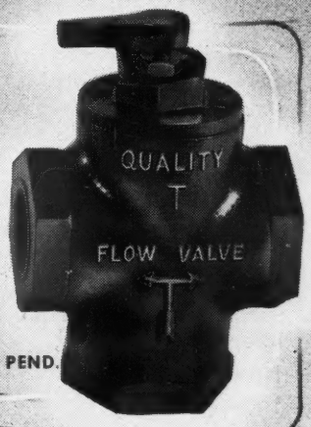
The Only *TWO-DIRECTIONAL* FLOW CONTROL VALVE *AT NO EXTRA COST*

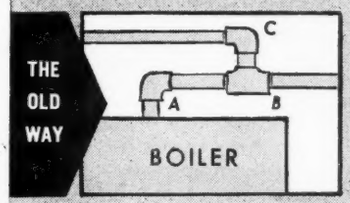
A masterpiece of engineering ingenuity . . . a simple advancement . . . yet essential to all Hot Water Circulating Systems.

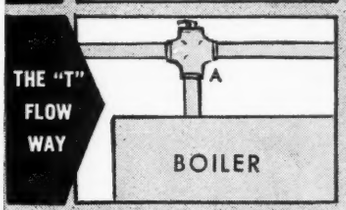
- Sizes 1"—1¼"—1½"—2"
- Used also as one-directional flow control valve
- SAVES LABOR
- SAVES TIME

AT NO EXTRA COST

PAT. PEND.







Water circulated from boiler through old "one-directional" flow valve (A), continues to T-Joint (B) and is partially diverted to L-Joint (C) where finally "TWO-DIRECTIONAL" flow is reached. RESULT . . . *unbalanced circulation, more work involved in installations, more piping and fittings needed, greater costs in time and materials.*

Water circulated from boiler to QUALITY *"T" Flow Control Valve (A).* RESULT . . . *immediate "TWO-DIRECTIONAL" flow, balanced circulation, less piping and fittings needed,* LESS *costs in time and materials.*

"SWEAT-ADAPTER" ELIMINATED WITH THE *Bronze* . . .

SWEATFLOW Control Valve

AT NO EXTRA COST

PAT. PEND.

"Sweatflow" Control Valves are designed especially for direct "sweat" connections with copper tube installations in all Hot Water Circulating Systems . . . without the use of "sweat-adapters." Sizes 1"—1¼"—1½"—2". This is a modern heating advancement developed by the engineers of the Quality Specialty Company, Inc., of Philadelphia.

More architects, builders, engineers and heating contractors are demanding . . . QUALITY "QS" PRODUCTS.

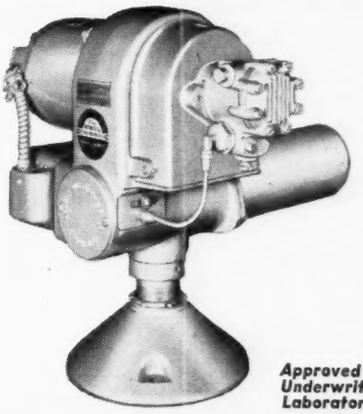
- Automatic Heating Equipment
- Indirect Drive Hot Water Circulators
- Direct-Drive Hot Water Circulators
- Flow Control Valves

SEE YOUR JOBBER OR WRITE DEPT. F-1 FOR INFORMATION

QUALITY SPECIALTY COMPANY, INC.
MANUFACTURERS
211 N. 2nd STREET • PHILA. 6, PA.

HERE'S WHY

HOWELL "Controlled FLAME" OIL BURNER



Approved by Underwriters Laboratories

MAKES MONEY *for Dealers!*

SAVES MONEY *for Users!*

- Saves 15% to 20% on fuel cost.
- Burns catalytic fuel oil.
- Increases fire box temperature 300° to 500°.
- Available in 4 sizes, .75 G.P.H. to 10 G.P.H.
- Eliminates soot—insures clean heat.
- Available in Flange and Pedestal Mount.

SIMPLE to SERVICE

Write or wire collect for dealer information.

H. A. HOWELL OIL BURNER Co.
400 Seventh St. Dixon, Illinois

servicing. When the drawer is moved out approximately 6", electrical current to the motor is cut-off automatically, but the blower can be operated with the assembly completely removed by reinserting the electrical plug. Provision exists for installation of the vent pipe in either side or top of the cabinet, and return air may be brought in at the rear, either side or bottom. Units are shipped assembled, with motor pre-wired and V-belt installed, equipped with automatic humidifier, combination fan switch and limit control and barometric draft regulator.

Timer Offered With Tempscribe Recorder

A TIMER for use with the Tempscribe operation recorder has been developed by Bacharach Industrial Instrument Co., Pittsburgh 8, Pa. One wire from the timer is plugged into the lead from the recorder, another is hooked across the control circuit of the oilburner motor. The clock of the timer operates on 110 volt, A.C. current.

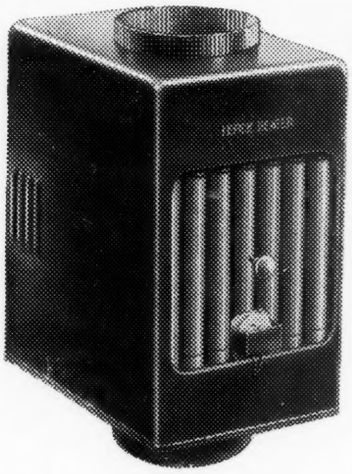
It is thus possible to record burner "on" time at night, even though the

recorder for the test may have been set up during the day. After recording the prescribed interval, the timer automatically switches off the recorder.

Lepick Heater Reclaims Heat From Smoke Pipe

MODEL SM-800 heater, offered by Lepick Heater Co., Seattle 4, Wash., reclaims waste heat from 6" smoke pipes of space heater installations. A larger unit also being manufactured can be adapted to installations with 7" smoke pipes. The heater, consisting of a number of vertical tubes, through which stack gases are passed, is equipped with an 8", 4 blade circulating fans, whose operation is regulated by a thermostatic control.

To install, it is necessary to remove one section of the smoke pipe, insert the



heater and plug into an electric outlet. Heat output is rated at 18,000 Btu/hr, with 839° F. stack temperature, down to 11,500 Btu/hr, with 410° F. stack.

Taco Producing Type A Adjustable Tempering Valve

TYPE A, adjustable tempering valve, has been designed by Taco Heaters, Inc., Providence 3, R. I., for controlling hot

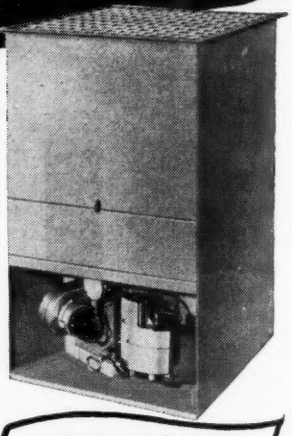
You Know at a Glance!

Write for complete details.

No guessing with AT-A-GLANCE. You know too, that they are guaranteed leak-proof — are "tailor-made" to fit all tank sizes and shapes — are sturdily built to withstand excessive pressure, and are fully Underwriter listed.

KRUEGER *Sentry* GAUGES
GREEN BAY • WISCONSIN

MORE PROFITABLE BECAUSE IT'S A
Package Unit
FLOOR FURNACE



ONLY DOMESTIC OFFERS ALL THESE ADVANTAGES

Domestic's oil-burning floor furnace comes *ready to install.* All controls are permanently located and electrically wired *at the factory.* Three simple connections: Oil line, smokestack, and electricity. "Backed by 14 years experience." Competitively priced. Attractive discount basis.

★ ★ ★

KEY SPECIFICATIONS: 50,000 BTU/HR output; register, metal-plated with statuary bronze; casing 24" wide, 24" deep, 43" high Listed with Underwriter Laboratories. Write for more complete details.

HERE NOW!
Domestic's Conversion Burner with ½ c.c. pilot.

DOMESTIC COMPANY
2922 WESTERN AVENUE • SEATTLE 1, WASH.

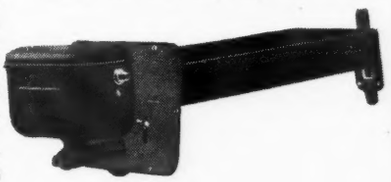
You're Sales Ahead When You Handle the COMPLETE *Skuttle* LINE of Quality Humidifying Equipment!

SERIES 600

Your best bet for bigger, better business . . . the new Skuttle Series 600! It's the one and only self-flushing, self-cleaning, fully automatic humidifier and it meets most humidifying requirements. Quickly, easily installed! Adaptable to sloping bonnets or straight plenums of both gravity and forced air furnaces. You need carry only one in stock!

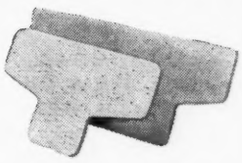
SERIES 500

Skuttle's Series 500 Automatic Humidifier is particularly recommended for gravity type furnaces having curved plenum. Among its important quality features are adjustable collar that fits sloping or vertical bonnets, automatic anti-siphon float control valve, adjustable rear support for levelling. Pan sizes from 16″ to 28″ long.



SERIES 300

Designed especially for forced air type furnaces, the Series 300 Skuttle Automatic Humidifier is equipped with adjustable collar that fits all bonnets, drawn seamless copper float tank, automatic anti-siphon float control valve, and large inspection door and frame. Pan sizes from 16″ to 24″ long.



VAPOGLAS PLATES MEAN REPEAT PROFITS FOR YOU!

For top efficiency, evaporating plates should be replaced once each heating season. And Skuttle's patented Vapoglas plates can bring you this yearly repeat business from every installation you make. They absorb 70% more water per pound than ordinary ceramic composition plates assuring maximum moisture output.

Cash in with Skuttle's complete line of quality humidifiers and keep on cashing in year after year with Skuttle's exclusive Vapoglas evaporating plates! See your local jobber now . . . or write today for state listings and the complete Skuttle Profit Story!

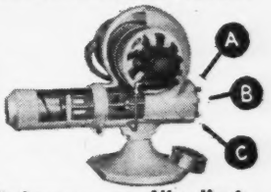
All standard units equipped with 5 ft. copper tubing, saddle and needle valve.

Skuttle
MANUFACTURING CO.
4099 BEAUFAIT
DETROIT 7 INDOOR COMFORT MICHIGAN

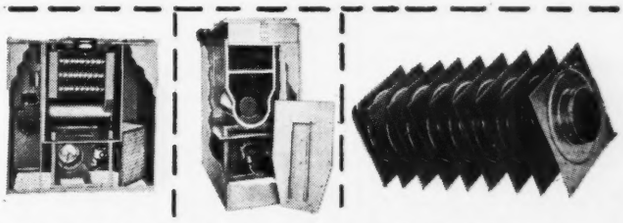
SO ADVANCED SIMPLE SUPERIOR

. . . That's why inquiries are so frequently followed by orders when jobbers and dealers investigate these newest Korth developments. See what's causing such a sensation in the trade. Get the facts and judge for yourself!

KORTH CAT-COMB SPIRALATOR BURNER



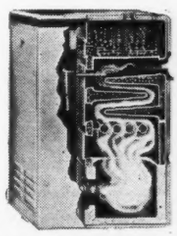
Burner and spiralator designed as one unit to efficiently burn the heavier catalytic fuel oils. It's practical —It's simple—It's service free. All guess-work is eliminated. Knobs: "A" Sets vacuum breaker disc. "B" Moves nozzle jet line and vacuum disc forward and backward. "C" Increases or decreases secondary air discharge area. ***All adjustments made on the outside of the burner while in operation.*** Phosphorous bronze spring clip ignition connections made automatically, permitting removal for inspection and nozzle change by simply sliding thru back plate opening. Korth Cat-Comb Spiralator Burner taps a tremendous replacement market for you during this period of oil shortage. It is exactly what the public wants. It **saves** over 20% in fuel cost.



PACKAGED KORTH-AIRE WINTER AIR CONDITIONER

with the Exclusive Finned Tube Exchanger. Air-Flow Finned Tube Flue Travel. Air-Foil Air Travel. Inspect-O-Panel. Units shipped completely assembled—blower, burner and controls wired up. ***Cuts installation costs—saves time and money.*** Take advantage of this wonderful opportunity to capture the home building market now available with ***Korth-Aire Package Units.*** Korth-Aire is a masterpiece of advanced engineering making it extremely saleable.

KORTH STEEL HEATING UNITS



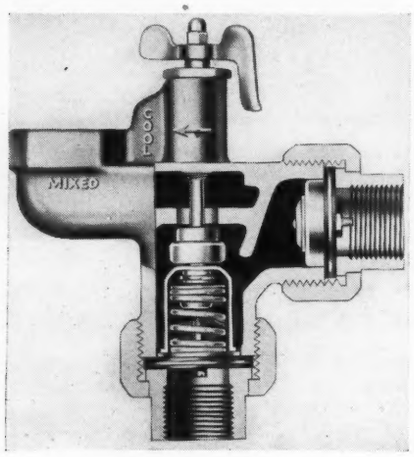
Compactly designed for **economy** and ***dependability.*** Built-in large capacity copper tankless water heater. Provides abundant hot water at all times. Heavy quarter inch steel plate construction, electric welded into one compact unit. Ample heating surface and gas flue travel. Made in seven sizes for steam, water, radiant panel and other type heating. Attractive, two tone insulated casing, encloses oil burner and controls. Guaranteed for **five years** against leaks due to defects in manufacture.

ECKHART
MANUFACTURING COMPANY
"For Over a Quarter Century"
ROSELLE, NEW JERSEY

. . . SO MANY ADVANTAGES
. . . SO SENSIBLY PRICED
. . . Compare design, compactness, heating surface, flue travel, stack temperature, efficiency, appearance . . .
'PHONE, WIRE, WRITE FOR INFORMATION.

PROTECT PROFITS . . . SELL REPUTABLE PRODUCTS

water temperatures at faucets in residences and small buildings. The valve is adjusted readily by an external pointer



knob to deliver water temperatures from 120 to 150 degrees F., considered within the range of most requirements.

Available in ½" and ¾" sizes, Type A features all brass, bronze and stainless steel construction.

Rochester Remote Indicating Fueloil Storage Tank Gauge

THE RESULT of several years of research is embodied in the remote indicating fuel

level gauge recently announced by Rochester Mfg. Co., Rochester 10, N. Y. It complements the degree-day systems by giving to the oil delivery man outside of a building an instantaneous dial reading of the oil level in a basement storage tank and shows a continuous indication of the progress of the fill to the maximum safe filling level. Instruments are individually calibrated to provide an outage of 10 to 15 gals., but, if preferred, they can be calibrated to indicate a completely full tank. The driver carries a dial indicator, powered by two size "D" flashlight batteries, and plugs in on a jack outside the building for a reading of oil level in the tank.

A magnetically-driven resistance coil, energized from the flashlight batteries in the dail indicator, is incorporated in the head of a tank gauge unit, resembling in external appearance Rochester's previous gauges. The complete unit consists of a No. 3185 magnetic gauge, No. 3186 indicator, weatherproof cable, [illegible] plug and cap, and wire connectors.

Excel Offers Two Sizes Of Furnace-Burner Units

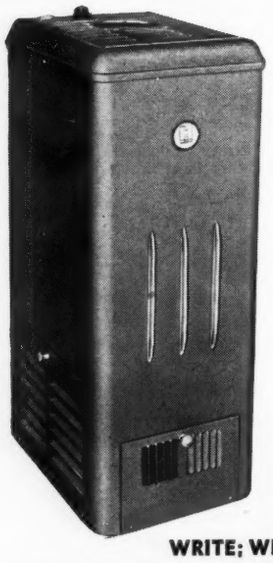
MODEL EX-100 AND EX-150 oilfired water air conditioning units are offered by Excel Co., Dowagiac, Mich., rated at maximum capacities of 100,000 and 150,000 Btu/hr. at the register, 1400 and 2100 maximum cfm required at ¼" S.P. The casing of the units completely encloses the gun type oilburner which fires them, and measures 55" high and 28" wide for the smaller model; 58" x 30" for the larger one. Both have effective heating surfaces of 6700 and 8800 sq. ins., and are equipped with blower

Small Jobs; BIG PROFITS!

For Good Dealers With the

HILTON Silent Oil Burner

(10,000 Sold in 1947)



Compact—
Easily Installed
Easy to Sell.
22,000 B.T.U. Max.
Excellent, Low-Cost for
Trailers,
Small Houses,
"Hard-to-Heat Rooms"
and
Many Small Heating Installations.

WRITE; WIRE; PHONE

HILTON PRODUCTS CO.

3128 E. Colorado St. Pasadena 6, Calif.

RYan 1-6432

THE *Galongage*

The Ideal Gauge for... Basement Tanks

WHEN making replacements and checking oil burners for greater efficiency, install a Galongage.

No other gauge generally used measures in gallons—is accurate to within 1½ per cent—has easy-to-read magnifying lens—has red warning numerals starting at 50 gallons.

Galongage comes fully assembled, fits all standard basement tanks and is listed by Underwriters' Laboratories.

More than ever before your customers will appreciate Galongage accuracy, reliability and eye appeal.

When ordering, specify depth of tank and size of opening.

APPLIED MECHANICS COMPANY

167 Oliver Street Boston 10, Massachusetts

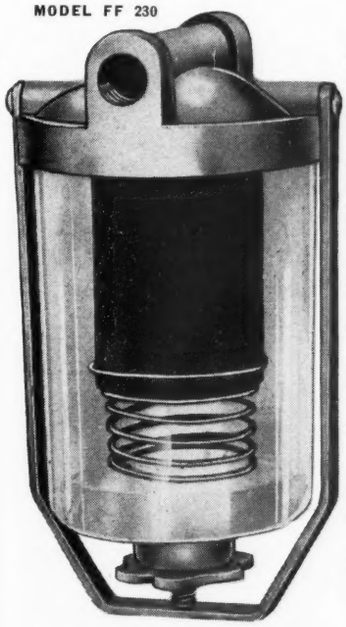
Only... Klemm FUEL OIL FILTERS

are equipped with *Chemistone* the original Controlled Porosity Element

. . . and only Klemm Filters offer "visible filtering." Your customers see the results—*the dirt, sediment and other foreign matter trapped by a Klemm Filter.* That's why Klemm units are so easy to sell and service. *Results are positive!* All your customers need this fuel protection. Make it a rule to suggest a Klemm Fuel Oil Filter on every call. YOU PROFIT ON EACH SALE . . . YOUR CUSTOMERS GET GREATER HEATING COMFORT.

HERE'S WHY KLEMM CHEMISTONE FILTERS SELL FASTER

MODEL FF 230



Streamlined . . . lots of eye appeal—a carefully designed filter that looks right with the finest installation.

Engineered . . . Scientifically engineered to give 100% filtration under all conditions. Easy to clean — no tools or wrenches needed.

Packaged Right . . . Put up in dealer cartons of 12 each or, assorted. Stocks easily . . . ships safely.

Priced Right . . . Superior in action, it's priced for quick sales. You'll find it doubly profitable to push Klemm filters.

NOW A CHOICE

MODELS FF 230, FF 201 with glass bowls

MODELS FF 430*, 401*, with metal bowls

*Listed for reinspection with Underwriters Laboratories

Klemm

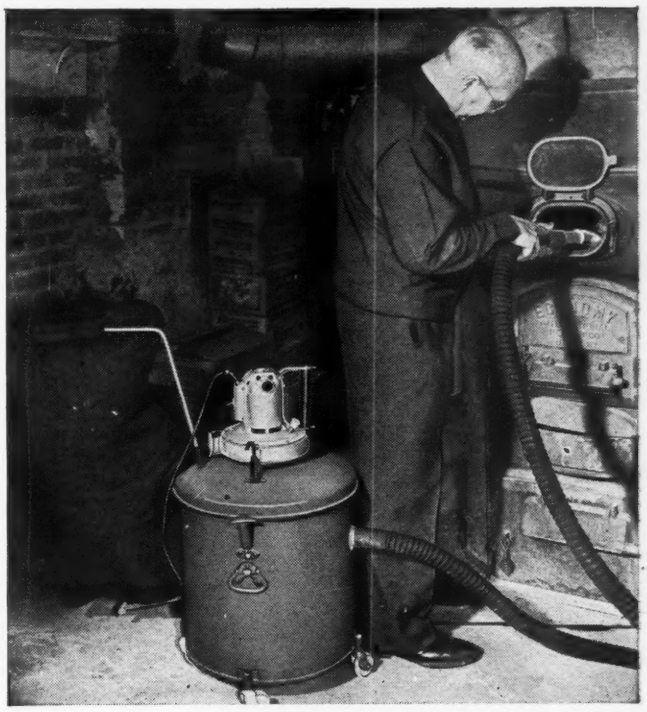
AUTOMOTIVE PRODUCTS COMPANY

1718 Damen Avenue Chicago 47, Illinois

Export Division: Guiterman Co., Inc., 35 S. Williams Street, New York 4, N. Y.

Furnace cleaning made easy!

General Electric Furnace and Boiler Cleaner gives you fast, thorough cleaning.



THERE'S MORE PROFIT than ever before for you with the new General Electric Commercial Vacuum Cleaner!

The powerful suction action quickly removes soot and scale from furnace interiors. You can clean more furnaces per day —and more thoroughly than ever!

Light in weight, simply constructed. One man can operate it, with no previous training.

Backed by the General Electric Company warranty. Special tools and accessories are provided. For further details, mail coupon below. General Electric Company, Bridgeport 2, Conn.

FAST • EFFICIENT • QUIET • ECONOMICAL

The New General Electric

Commercial Vacuum Cleaner

GENERAL ELECTRIC

A & M Department, Section 144, General Electric Company, Bridgeport 2, Conn.

Send descriptive literature concerning

( ) Wet and Dry Pickup Vacuum Cleaner

( ) Furnace and Boiler Cleaner

Name.....

Firm.....

Address.....

City.....**State**.....

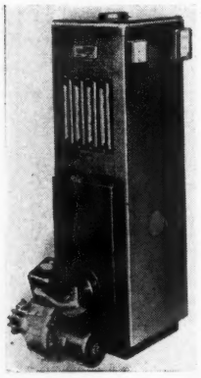
fueloil & oil heat

motors of 1/6 and 1/3 hp. capacities. Model 100 uses two 16" x 25" replaceable air filters; model 150, three filters of the same size.

Factory-assembled units are shipped to include the heating unit, casing, blower, burner, filters, humidifier, draft regulator and combustion chamber.

U. S. Radiator Oilburner; Oilfired Boiler-Burner Unit

A GUN TYPE OILBURNER, to be marketed under the trade name of U. S. Solar Flame, is offered in either flange or pedestal mountings by United States Radiator Corp., Detroit, Mich. A single model is rated from .6 to 6.0 gph. It features a fuel unit, consisting of pump, strainer and pressure regulating valve, assembled as a compact unit and a drawer assembly, containing the oil line, air spinner and ignition points.



The Comfort Cub boiler-burner unit is designed for hot water heating systems in small homes and commercial buildings, requiring only a 23" wide and 30" deep floor space, making it suitable for alcove, utility room, kitchen or basement use. It is produced by mass production methods in one size only, is completely automatic in operation, fired with the Solar Flame oilburner.

Model 55 Floor Furnace By Wyoma Heater Company

MODEL 55 floor furnace, fired with a Boston Breese vaporizing oilburner with horizontal flame, is being produced by Wyoma Heater Co., Lynn, Mass. Developing a Btu output of 60,000, the burner can be furnished in automatic or manually-operated models, consuming .55 gph maximum on high fire. Casing size measures 21 7/8" wide, 43" long, 30 1/4" high, with 6" flue connection.

The unit is constructed of heavy gauge steel, with double casing, separated by a dead air space, to prevent overheating the outside casing. Lifting the floor grille makes the entire unit accessible for lighting, inspection or servicing. Heating surface totals 2500 sq. ins., with cold air return and hot air outlet 21" wide each, 14 3/4" and 27 1/4" long.

Bock Water Heater And Unit Heater

A UNIT, developed by Bock Corp., Madison, Wis., combines a hot water heater and a model M-12 unit heater. A room and water thermostat permit automatic operation of the unit, which was designed primarily for use in milkhouses, filling stations, small stores or similar applications where room heat and a supply of hot service water is desired. The water thermostat keeps the water at any desired temperature, with the room thermostat operating the unit heater blower.

The heater operates on No. 1 or 2 fueloil in a vaporizing oilburner, with electric spark ignition. The galvanized steel tank is insulated with mineral wool, with a light gauge steel jacket

BUILT For BETTER CLEANING

the GRAND RAPIDS deluxe FURNACE CLEANER

Model of the Doyle Vac-It

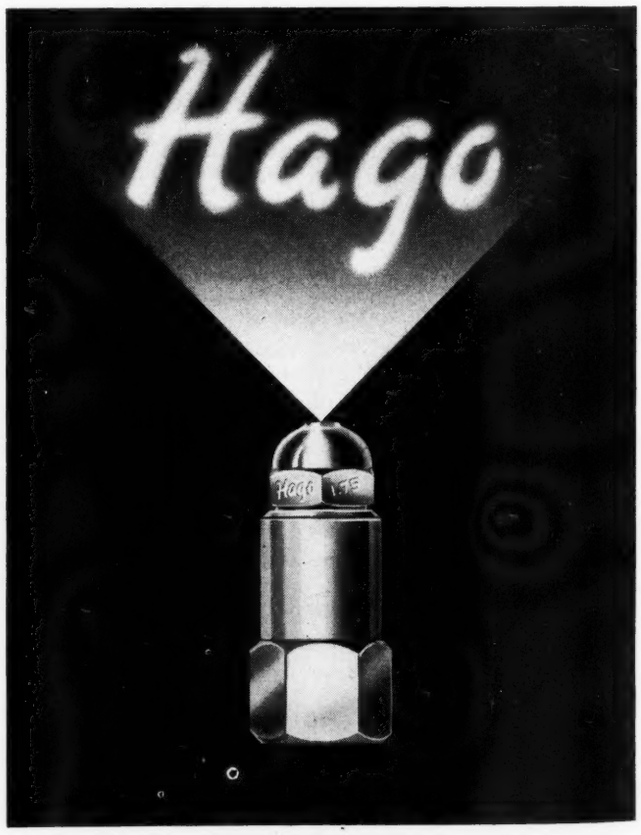
Built by men who understand the problems of furnace cleaning, the Grand Rapids Furnace Cleaner has been developed into a highly serviceable unit meeting all the requirements for faster, easier and more profitable cleaning:

DURABLE—COMPACT CONSTRUCTION • LIGHTWEIGHT ALUMINUM HEAD ASSEMBLY • HIGH POWERED MOTOR • 9" DIAMETER ROTARY FAN • LARGE CAPACITY HEAVY DUTY STEEL TANK • FLEXIBLE RUBBER CLEANING HOSE WITH 2" INSIDE DIAMETER • EFFICIENT OUTSIDE FILTER BAG • FREE ROLLING SWIVEL-TYPE CASTER WHEELS • ENGINEERED FURNACE CLEANING ATTACHMENTS.

Write today for complete information

Doyle VACUUM CLEANER CO.

233 Stevens St., S.W. Grand Rapids 7, Michigan



HAGO PRODUCTS

1281 SPRINGFIELD AVE. IRVINGTON 11, N. J.

it's *May* again!

SATURDAY
1
MAY 1948

Again in 1948, it's May—Quiet May! As in every other year since 1923, the Quiet May oil burner is the choice of home-owners who want dependable heat with dependable economy.

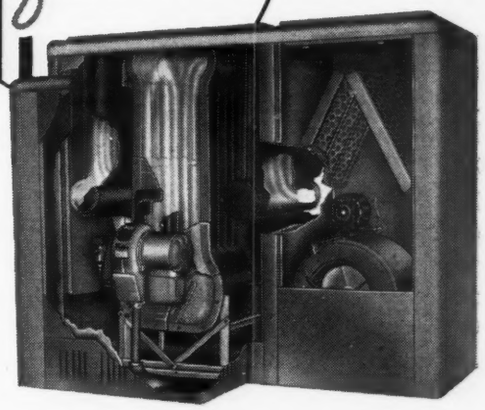
NOTE: The dealership in your area may be open. We invite your inquiry.

QUIET MAY OIL BURNER

MAY OIL BURNER division
Gerotor May Corp., Baltimore 3, Md.

SELL THE *Finest* in Oil Fired AIR CONDITIONING

RUDY *Lifetime* oil fired cast iron air conditioners



The Rudy Lifetime Oil-Fired Cast Iron Furnace is the aristocrat of furnaces. It is designed and built to the highest standards of performance for those home owners who demand air conditioned automatic heat at its best. Constructed of heavy cast iron, Rudy units retain and radiate heat long after the burner has been turned off, so air stratification is minimized and fuel saved. Rudys operate at lower temperatures and last longer. The famous Rudy Floating Flame burner does an outstanding combustion job. To those who want the best, you can sell nothing finer than the Rudy Lifetime Oil-Fired Cast Iron Air Conditioner.

Get the full story on Rudy Air Conditioners and Water Heaters today. Just send a postcard to—

RUDY ALL STEEL OIL-FIRED AIR CONDITIONER

Here is a less expensive, entirely automatic all steel oil-fired air conditioner also of high quality for volume operations—an ideal merchandising companion to the famous Rudy Lifetime line.

RUDY OIL-FIRED SIDE ARM WATER HEATER

The only water heater with Life-Cote* lining which minimizes corrosion and assures abundant rust-free water. Here is automatic hot water at very low first and operating costs.

RUDY

RUDY MANUFACTURING COMPANY
DOWAGIAC, MICHIGAN

holding it in place. Heating capacity is 25 gph through an 80° F. temperature rise. The storage tank has a 30 gal. capacity and the unit measures 18″ outside diameter, 60″ high.

Tray-Hart Carrier Handles 55 Gal. Drums

AN ACCESSORY to an industrial fork truck, designed and manufactured by Trayner-Reinhart, Oakland 7, Calif., handles steel drums of 55 gal. capacity, as many as four at a time. It can be adapted to any industrial gasoline or electric-powered fork truck and is able to pile drums three high. Other Tray-Hart carriers are available to fit other size drums.

The carrier employs a hydraulic device, with two gripping shoes for each drum. When pressure on the hydraulic system is released, springs bring the shoes in contact with the drum, so that even if pressure lines should be cut, the drums cannot fall. The carrier permits side movement of 4″ in either direction and can accommodate 2″ diameter and 6″ height variations in drum dimensions.

Last Month

A BILL was introduced in the House of Representatives that would direct the Bureau of Mines to keep accurate statistics on the domestic and foreign oil situation. The bill would authorize $300,000 for the project.

GOV. BEAUFORD JESTER of Texas replied to Sec. Krug's request for all States to increase oil production by outlining five things that should be done to ease the oil supply. Besides more steel for the industry and state ownership of tidelands oil, the Governor advocated "Stop changing from coal to oil and gas for fuel until petroleum industry catches up with its demand.

STANDARD OIL (N. J.) announced that tankers owned and operated under the American flag by the company will be more than adequate to transport all its oil shipments from the Gulf to East Coast ports in 1948; that the company and affiliates spent $47 million for pipelines and storage facilities last year; that the company spent $18 million last year for research.

CANADA REFUSED to lift the ban on importation of kerosene-burning refrigerators, explaining that they were bought mainly by well-to-do people for their summer cottages.

S. A. SWENSRUD, vice president of Gulf Oil told the Cleveland Petroleum Club that the Western Hemisphere surplus of crude production probably will disappear about 1951-52. "By 1955 the Western Hemisphere would be needing to receive half a million barrels a day from the Eastern Hemisphere.

IROQUOIS GAS CORP. was served with a summons and complaint by a couple in Amherst, N. Y., who claimed damages for failure of the utility to supply gas during the severe weather last winter. Damages of $7500 were asked in the move, the first by the Citizens Committee of Gas Consumers, which plans other suits for physical injury and property damage. The complaint states the company took on new heating users, even though there was not enough gas for previously qualified users.

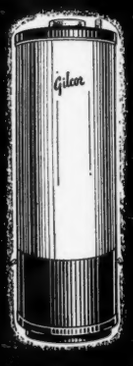
W. T. HOLLIDAY, president of Standard Oil (Ohio), advocated at Oklahoma City that future petroleum shortages

ARE YOU MISSING A GOOD DEAL?

General Filters thinks you are if you don't install a General Filter for every one of your fuel oil burner customers. It's a "good deal" for the customer since it greatly aids in eliminating troubles due to clogged nozzles and it's a profitable service item for you. If you haven't already done so, investigate by writing to your jobber or directly to us.

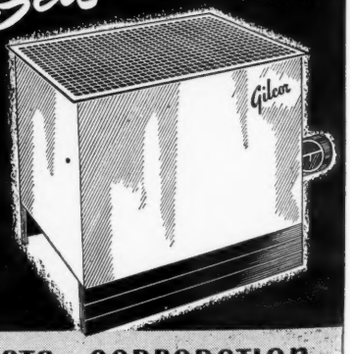
GENERAL FUEL OIL FILTER
12890 WESTWOOD AVE.
DETROIT 23, MICHIGAN

you get more with Gilcor
A BETTER PRODUCT



OIL BURNING
WATER HEATERS
FLOOR FURNACES
AIR CONDITIONING FURNACES

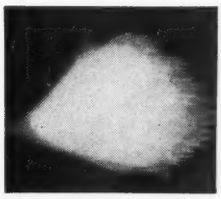
DESIGNED TO Sell.. PROFITABLY



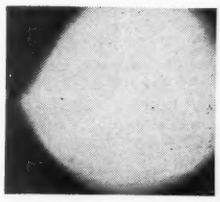
GILCOR PRODUCTS CORPORATION
DOWAGIAC, MICHIGAN

Hollow Flame

SAVES 30% ON ANY BURNER



COMMON FLAME



HOLLOW FLAME

AIRFLAME, the only Hollow Flame Replacement Head, saves more fuel yet costs less than any other.

Oil Burners, Boiler Burner Units.

Eventrol Control Systems.

Jobber or Dealer Franchises.

Airflame

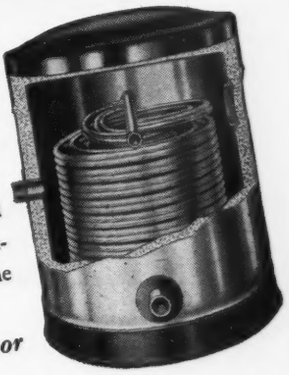
648 McAlister Ave. **Waukegan, Ill.**

In a

CLASS OF ITS OWN!

Imitated? . . . Yes—but the ALL-COPPER Tankless Heater originated by G&C can't be duplicated—has never been equalled—is still the *only* one of its kind!

Now furnished either in polished Copper without insulation—or insulated and jacketed in two-tone baked enamelled steel shell.



Contact your jobber now or write to us.

THE HOUSE OF HIGH GRADE COPPER PRODUCTS

Manufacturers of large Tankless Heaters and Hot Water Storage Generators for commercial installations.

GERSTEIN & COOPER, CO.

1-3 WEST 3RD STREET • SOUTH BOSTON, MASS.

Improve Your Service

Increase Your Sales

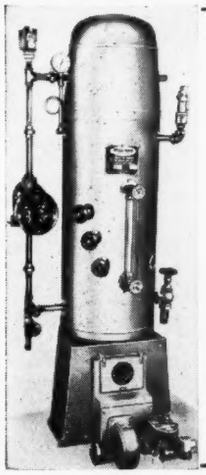
CLEAN SWEEP SOOT REMOVER

THOROUGHLY CLEANS ALL TYPES OF BURNERS WHILE HOT

Approved by oil burner manufacturers and testing laboratories. Will not clog holes, leave a residue or overheat vital parts. Also effective in gas and coal units. Special Clean Sweep sprayer for faster, more economical service available. Ask your Jobber or write us today. (A few Jobber franchises still available.)

CLEAN SWEEP CO. **P. O. BOX 156 SO. LANSING 9, MICH.**

LOOK FOR THE BROOM ON THE PACKAGE



KRES-KNO VITROPAK AUTOMATIC STEAM GENERATORS

100 lbs. Working Pressure, A.S.M.E. Approved

From one to 100 Horsepower

Complete with or without low water cutoff and pump controls, condensation system. Packaged ready to install with complete instructions.

Suitable for Tailor Pressing Machines, Laundries, Dry Cleaners, Chemical Plants, Food Processing, and many other applications where high pressure steam is required.

Wholesale Distributors of

Commercial Oil Burning Equipment, Oil Burners, Controls, Supplies, and Accessories since 1931.

Oil Heat Utilities of Long Island, Inc.

730 Avenue of the Americas, New York 10, N. Y.

Modern Heating Plants conserve fuel save money

THERE'S BIG BUSINESS in replacing old oil burners with modern efficient heating units.

This year, sell conservation and efficiency.

GULF

Gulf Oil Corporation • Gulf Refining Company

DIVISION SALES OFFICES:

Boston • New York • Philadelphia

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HAYWARD OIL BURNERS

Many Attractive Territories still open for Exclusive Distribution

HAYWARD MFG. CO., INC.

505 COURT STREET BROOKLYN 31, N. Y.

E-Z SUMMER CLEAN UPS

E-Z Fuel Oil Soot Destroyer will clean many thousands of oil-fired furnaces this Summer. Its speed (one application does the job), its thoroughness in eliminating all soot, its safety and low cost per job, make E-Z a big profit item. (Good for fuel oil soot only.) Keep a 5 lb. Can in each service truck, always. Stock the 1 lb. Can for direct sale to customers. If your Distributor cannot supply you, order direct.

No. 1 Pkg. approx. 1 lb. ...List $1.00 ea.
No. 5 Pkg. approx. 5 lbs. ..List $4.50 ea.

Special discount to Distributors on quantity purchases, allows for extending regular discount to Dealers and Servicemen.

HEALY-RUFF COMPANY
797 Hampden Avenue • St. Paul 4, Minnesota

might be prevented by discontinuing the use of fueloil for heating. He thought petroleum should be conserved for use only in internal combustion engines.

HEAVY FUELOIL can be produced from coal at present for about the same cost as petroleum oils can be delivered in certain areas, Bureau of Mines scientists told the American Chemical Society. Hydrogenation under high pressures and temperatures will produce the heavy fuels. The meeting also heard that shale can supply the gasoline and oil demand for 150 years.

CANADIAN FUELOIL PRICE was a subject for possible investigation by the House of Commons Price Committee, according to Paul Martin, chairman. Prices in British Columbia have risen sharply in recent months, and have a marked effect on agricultural production.

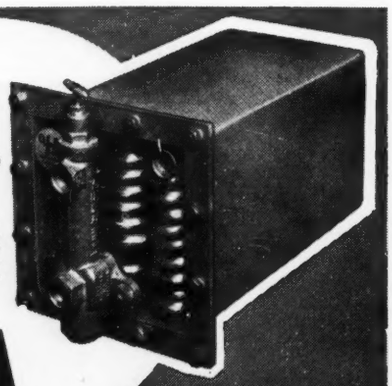
FIRST RECEIPTS of Arabian crude reached Canada early in April. The 3,850,000 gallon cargo was pumped off at Portland, Me., and sent through the pipeline to Montreal.

PHILADELPHIA GAS WORKS CO. advertised in Mid-April that the capacity available for new heating installations had been reached for this year, and no additional applications are being accepted.

SAMUEL B. ECKERT, vice president of Sun Oil Co., Philadelphia, announced that enough domestic heating oil could be made available "only by a price which fully reflects the strength of consumer preference for this product as against demands for gasoline." He made the statement in opposition to "the disturbing idea that either government or industry should dictate to the public the end-use of industry's products."

Yula

C.H.M. Residential Shell Tankless Heaters
(Can be used with steam or hot water heat)
C.H.M. In-Boiler Tankless Heaters
(For Residences, Apt. Houses, Industrial Buildings.) Can also be furnished as in-boiler heaters.
Write to Dept. F-5



Yula WATER HEATERS, INC.
166 WEST 225 ST. • NEW YORK 63

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FITZGIBBONS
FUEL-SAVING STEEL BOILERS
A.S.M.E. built, Hartford inspected, S.B.I. rated

MOST ECONOMICAL IN FUEL — THE FITZGIBBONS BOILER — 1886

The ultimate in economical heat and domestic hot water . . . for any size installation . . . for oil burner, gas burner, stoker, hand firing. Ask your local Fitzgibbons engineer, or write us.

MEMBER SBI

STEEL BOILERS Since 1886

Fitzgibbons Boiler Company, Inc. 101 PARK AVE. NEW YORK 17, N. Y.

ONLY THE HOMEASE OIL BURNER HAS THESE TWO EXCLUSIVE FEATURES:

1. *"FLAME-IZER" Complete Flame Shape Control*
2. *"FIRE-STAT" Complete Combustion Control*

HOMEASE
THE KEY TO BETTER LIVING

HOMEASE PRODUCTS COMPANY
PATERSON 3, NEW JERSEY

STANDARD WATER TUBE BOILERS

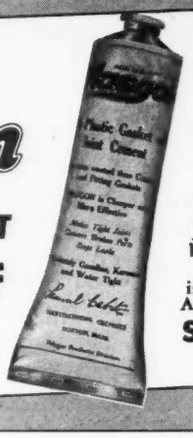
A MODERN HEATING PLANT FOR BETTER HOMES!

designed for ECONOMY of OPERATION DEPENDABILITY and EFFICIENCY

Write for BULLETIN No. 108

Standard Heater & Oil Equipment Co.
245 CORNELISON AVENUE, JERSEY CITY 2, NEW JERSEY

USE
Plasgon
FOR PERMANENT
LEAKPROOF
JOINTS

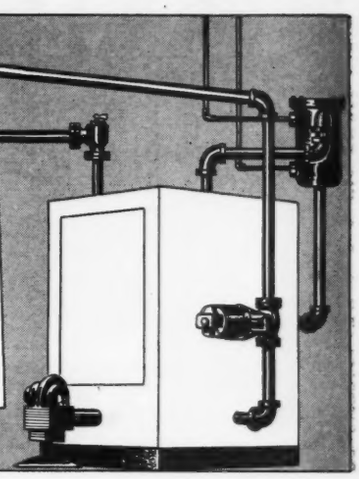


Easy-to-use Plasgon is the ideal seal for flanged or threaded joints. Needs no thinning—no heating—is applied direct from the tube. Plasgon resists considerable pressures and heat up to 350°F . . . *stays* proof against steam, oil, gasoline, kerosene and other common solvents. Can be removed with 80% alcohol.

As an adhesive, Plasgon withstands a shearing stress of 200 pounds per square inch. "Sandwich Adhesion" will join metals, glass, rubber and plastics or any porous materials. A Plasgon joint is tough and flexible . . . cannot be dislodged by vibration, shock or jarring.

Write today for free sample and complete information about Plasgon and the "Sandwich Adhesion" joint.

SAMUEL CABOT, INC.
2274 Oliver Building, Boston 9, Mass.



Oilheating Trends

(*Continued from page* 11)

off by 52%. This gloomiest prediction, the one from the Midwest, has been influenced by the advertising of Indiana Standard. Several of the reporting dealers specifically said so. If these dealers country-wide should prove to be anywhere near right in their projections, we would find the industry ending the year with about 515,000 installations, including replacements. Then, if replacements should follow their pattern to date, the net number of new oil users would be under 300,000. It is pretty well recognized that the figure cannot fall that low, which would indicate that there is every probability of the dealers doing more total business than they now expect to do.

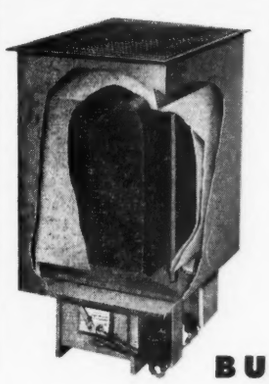
DEALER COMMENTS: On the various questions of the month, these comments were typical: "March has been our slowest month in the last five years" . . . "We expect the fog to raise within the next sixty days" . . . "To revive burner sales the public has got to be shown that there will be plenty of oil next winter, and at a lower price" . . . "Replacement sales should be about equal to conversions from other fuels, if people start buying again" . . . "We are covering all users with a letter trying to sell another 275-gal. tank" . . . "Standard Oil (Indiana) ads are scaring people" . . . "We are getting several calls from prospects building new homes" . . . "Oil bought now to fill storage before June will probably not be charged against the dealers' quota for next season" . . . "With the present outlook, we do not expect to sell one new burner this year; with the unsettled oil

the ONLY Ignition Transformer
with a 2 YEAR Guarantee

Super
ELECTRIC PRODUCTS CORP.
1057 Summit Avenue, Jersey City 7, N. J.

SAVES 20%
ON FUEL

Richfield's amazing new Turbulator Head. For details write:
Richfield OIL BURNERS
315 Fifth Avenue
New York 16, N.Y.



The ONE and ONLY
OIL FLOOR FURNACE
With Electric Ignition
No Pilot Light—No Constant Low Fire Stage to Waste Oil
It's Ideal for Replacement and it's made ONLY by
H.C.Little
BURNER CO., INC.
SAN RAFAEL, CALIFORNIA

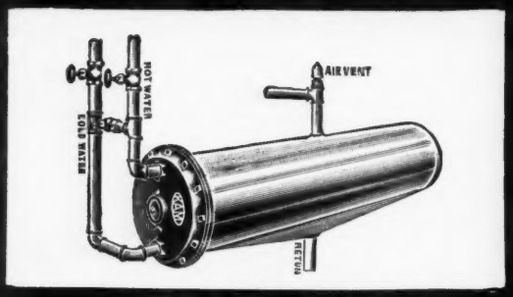
Sundstrand OIL BURNERS

WRITE US FOR COMPLETE INFORMATION

FOR
• CLEAN
• QUIET
• ECONOMICAL
• AUTOMATIC HEAT

SUNDSTRAND ENGINEERING CO.
ROCKFORD, ILLINOIS

KAM Tankless Heaters



KAM

Superior Designed for Home and Industry

Engineered on principles of simplicity and efficiency, KAM WATER HEATERS dependably supply a constant abundance of clean, hot water. For installation on outside of all types of automatically fired steam, vapor or hot water boilers in any season.

Since 1906, manufacturers of Indirect, Tankless, Instantaneous and Oil heaters—Copper boilers.

KAM WATER HEATER MFG. CO., INC.
239-249 ALABAMA AVENUE BROOKLYN 7, N. Y.

situation it is foolish to sell an oilburner" . . . "We distributed 1,000 of the new OHI booklets, but just as we finished, the newspapers again had bad headlines; I had to start all over with prospects whom I had thought were convinced" . . . "I am afraid it will be three years before we can go out and sell new oil accounts and new oilburners" . . . "Have never seen a time with so few burner prospects" . . . "A good number of 275-gal. extra tanks will be installed, provided the Fire Marshal will give us permission" . . . "We will fill our storage as soon as the price situation quiets down" . . . "We have been sending out letters to sell extra tanks, but wtih the stunt Esso pulled on price for summer fillups, it doesn't help" . . . "I am planning for an even break this year" . . . "No oil supplier will take any new customers in our town; this kills the burner business" . . . "We are not going to make any new installations until we know the true oil picture for next winter" . . . "The public is still scared; replacement sales will be the thing with very few conversions from coal" . . . Ninety per cent of prospects are considering gas.

350,000 Installations

(*Continued from page 62*)

1948 of 5,850,000 B/D will be about 450,000 above the 1947 average, and this together with anticipated pickup in imports from 430,000 to 480,000 B/D will bring an increase in total crude available of 8% over 1947.

In conclusion, Cogan emphasized, "I believe it may be concluded that we need not be unduly concerned about running out of petroleum raw material resources for many years to come."

James P. Patterson, vice-president, Pan American Petroleum & Transport Co., was the fourth member of the afternoon's panel on supply and demand. (Harry B. Hilts, executive secretary of ESPA was Moderator.) A few high points from Patterson's paper follow:

During the year 1946, according to the statistics of the United States Army Corps of Engineers, 428,000,000 tons were carried on inland waters of the United States, petroleum and its products accounting for 37% of this total, or roughly, 158,000,000 tons. New York State has a right to be proud of its Barge Canal System, which carried in the year 1947, 2,651,250 tons of petroleum products from New York and Albany to various points on the Canal starting at Troy and ending at Buffalo.

In 1939, at the beginning of World War II, the tanker fleet of the world consisted of 1594 vessels with an average speed of 11.07 knots per hour and an average carrying capacity of 10,686 D.W.T. per ship. Because of the intensive construction which took place during the war years, the world's tanker fleet as of October 1, 1947, consisted of 1868 vessels with an average speed of 13.10 knots per hour and an average carrying capacity of 12,626 D.W.T. per ship. This tremendous expansion took place even in the light of the great number of tankers which were sunk between the years 1939 and 1945. The percentage of the total tonnage of the world which the United States had under its flag in 1939 was only 23.9. Inasmuch as practically all of the tankers in the six-year period mentioned were built in United States yards and under United States flag, we had, on October 1, 1947, 50.8% of the world fleet. In March,

PREFERRED

DRAFT-A-JUSTOR

The Original. Still the Best. Hundreds of Thousands in Use. • Holds the draft constant in the fire box. • Scientific draft control for the smallest to the largest jobs. • Stove, domestic, and commercial sizes from 4" to 24" in diameter. • Industrial sizes from 24" x 24" to 5' x 12'.

Write for literature and trade price

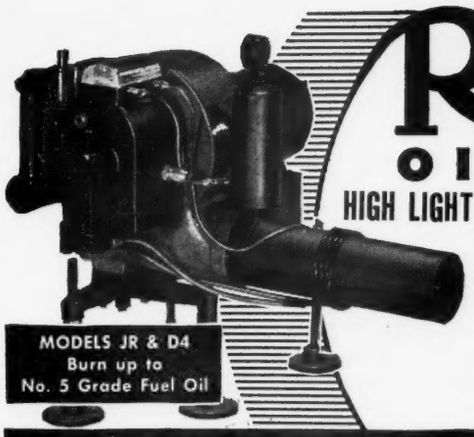
PREFERRED UTILITIES Mfg. Corp.
1860 Broadway, New York 23, N. Y. Boston Office: 839 Beacon St.

EXCLUSIVE SPIRAL FLUE gives you more to sell!

Here's "horizontal" boiler efficiency with "vertical" boiler compactness! The exclusive Spiral Flue (Pat. applied for) is offered only by EVEREDY and OILTRONIC Burner-Boiler Units. Capacities up to 1,043,000 BTU.

CONVERSION OIL BURNERS 0.65 to 20 G.P.H.

MT. HAWLEY MFG. COMPANY
MT. HAWLEY AIRPORT PEORIA, ILLINOIS



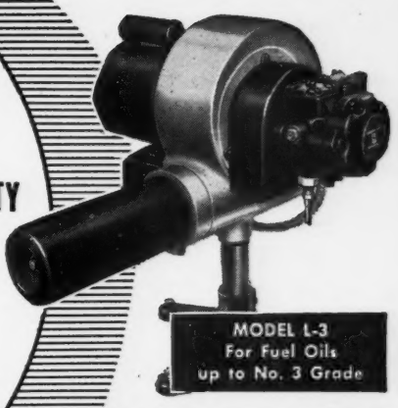
RAYFIELD AUTOMATIC OIL BURNERS

HIGH LIGHT OIL PRICES MAKE GOLDEN OPPORTUNITY

Cash in on conversion and replacement jobs now by installing Rayfield burners for No. 5 oil and make profits for yourself and savings for your customers.

Model JR for 2,000 to 8,000 Gals. yearly
Model D4 for 5,000 to 20,000 Gals. yearly

Investigate comparative oil prices in your locality now and figure it out for yourself—it will amaze you.



MODELS JR & D4
Burn up to
No. 5 Grade Fuel Oil

MODEL L-3
For Fuel Oils
up to No. 3 Grade

C. L. RAYFIELD CO., 2010-18 S. Halsted St., Chicago 8, Ill.

1947, before the sale of a large number of tankers to other nationals was consummated, the United States percentage reached a peak of 59.3.

Other speakers on the two-day program included Harry J. Kirits, president of the association, Charles L. Harding, Socony-Vacuum, who spoke on "Middle East Oil Supply," Prof. Richard S. Meriam of Harvard, on "Government Interference in the Oil Business," Leonard Ulrope, Esso Standard, on "Public Relations in Your Business," and Max W. Ball, director Oil & Gas Division, Dept. of the Interior. Ball, as the headlined speaker of the convention, discussed supply problems in general, but principally made the significant point that there should be no restrictions on oilburner sales other than that provided by price of fuel, which always was the natural adjustment between supply and demand.

◈

Stefco Steel Co., Michigan City, Ind. Catalog describing the proper use and installation of Panelox stainless steel combustion chamber. The chamber, formed by piecing together two types of interlocking panels, is represented as heating up quickly, and cooling rapidly.

A. Greene Mfg. Co., Philadelphia 40, Pa. Even Heet model A gun type oilburner is shown in an information sheet, on which there is room for dealer imprint. Complete specifications are given and there has been prepared for the burner also a manual, with instructions for maintenance and installation. Contained are the manufacturer's recommendations for service, wiring, tank installation and piping and fireboxes.

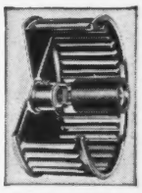
Write for details on how a QUALITY Burner and close factory Cooperation make a REXOIL Franchise profitable for You.

REIF-REXOIL, Inc., BUFFALO N.Y.

Manufacturers of Rexoil Conversion Burners, Boiler Units, Furnace Units and Direct-Fired Conditioners

Your Source of Supply for L-R FLEXIBLE COUPLINGS

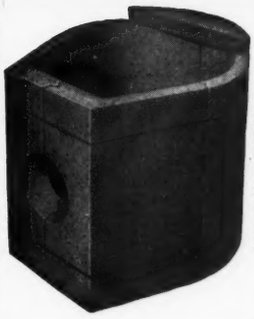
USE FANS WITH L-R JAWS AND SAVE MONEY



There is no substitute for L-R Flexible Couplings in the Oil Heating Industry—whether used for pumps, fans, blowers or transmission of power from motor to equipment. They are the dependable, fool-proof standard of the trade.

LOVEJOY FLEXIBLE COUPLING COMPANY
5012 W. LAKE STREET, CHICAGO 44, ILLINOIS

truly TIME-TESTED



COMBUSTION CHAMBER SPECIALISTS SINCE 1934

LITE-CAST
INSULATING REFRACTORY

DESIGNERS AND MANUFACTURERS OF SPECIAL SHAPES

Monogram Products Co.
PHILADELPHIA 4, PA.

Since SIMPLEX OIL HEATING CORPORATION SIMPLEX OIL BURNING SYSTEMS 41½ YEARS' MARK 1910

Simplex Oil Burning Systems

RESULTS COUNT!

SIMPLEX OIL HEATING CORP.
11 Park Pl., New York 7, N. Y.

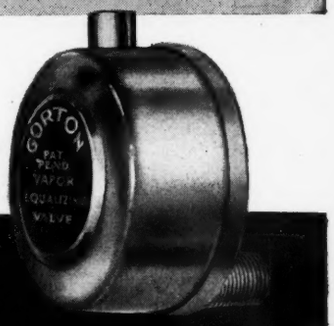
GORTON *Gives Guaranteed* EVEN HEAT DISTRIBUTION

WINS SATISFIED CUSTOMERS . . .

The Gorton System of Vaporizing and Equalizing existing steam heating systems for automatic heating provides quick automatic equal distribution of heat to every room . . . The flow of heat is automatically controlled so that all rooms receive equal distribution of heat.

NO PIPING CHANGES REQUIRED . . . GETS RID OF THE COLD ROOM PROBLEM

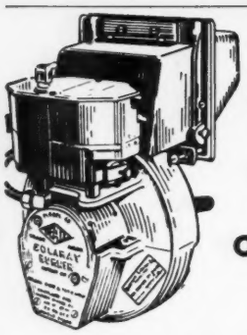
GET THE FACTS . . . WRITE TODAY! . . . FOR BULLETIN NO. 115D



GORTON HEATING CORP.

Manufacturers of High Grade Heating Equipment Since 1887

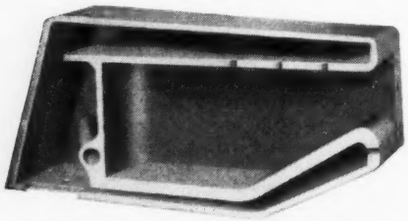
CRANFORD NEW JERSEY



Opens a Whole New Market for Oil Dealers

Beall 45 SOLARAY RANGE BURNERS

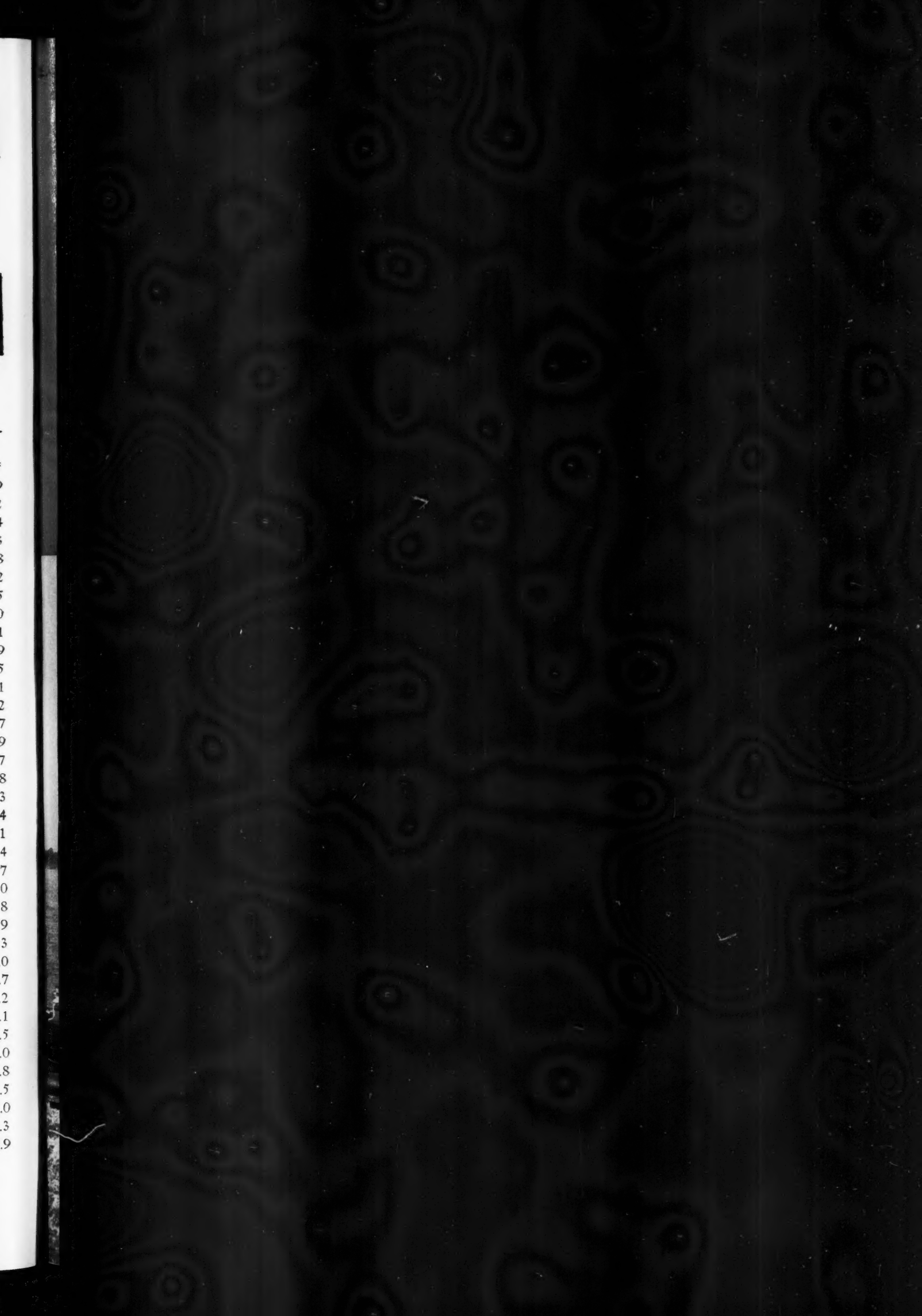
Here is a small conversion oil burner that offers the dealer a wide range of sales possibilities. Ideal for wood or coal ranges, hotel ranges, floor furnaces, and other small commercial applications. Ultra-simple in construction, operation and installation. Safe, dependable—carries Underwriters Label of approval. Burns low-cost fuel oil—maximum consumption ½ gal. per hour. The Solaray burner has proven itself a fast seller with minimum service requirements and good profit possibilities.



Cross section of Beall's electric welded steel combustion chamber. Oil is fed by gravity at center and distributed evenly throughout chamber. Air is fed from outer chamber. A wide range of temperatures are available simply by turning heat control valve.

BEALL PIPE and TANK CORP.
1945 Columbia Blvd., Portland, Oregon
Gentlemen: Please send literature and prices
Name_____
Address_____
City_____ **State**_____

DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE (Sept. 1 to Mar. 31)			
	March		Percent					Percent
Normal	1947	1948	Change*		Normal	1947	1948	Change*
955	923	1029	+ 7.7	Albany	5817	5600	6565	+ 12.9
389	599	307	— 21.0	Atlanta	2794	2803	2760	— 1.2
650	764	562	— 13.5	Baltimore	4063	3719	4081	+ 0.4
852	847	837	— 1.8	Boston	5067	4592	5338	+ 5.3
1010	1089	940	— 6.9	Buffalo	5782	5424	5828	+ 0.8
871	981	857	— 1.6	Chicago	5410	5364	5586	+ 3.2
681	839	556	— 18.4	Cincinnati	4487	4474	4257	— 0.5
892	1025	813	— 8.9	Cleveland	5281	5022	5384	+ 2.0
284	464	380	+ 33.8	Dallas	2269	2369	2657	+ 17.1
792	853	968	+ 22.2	Denver	4990	5050	4976	— 3.9
849	998	993	+ 16.6	Des Moines	5742	5689	5889	+ 2.5
943	1058	932	— 1.1	Detroit	5681	5319	5798	+ 2.1
962	1052	940	— 2.3	Grand Rapids	5817	5402	5747	— 1.2
871	909	890	+ 2.2	Hartford	5296	4979	5809	+ 9.7
982	1009	1203	+ 22.5	Helena	6548	6923	6808	+ 3.9
154	267	191	+ 24.0	Houston	1283	1456	1549	+ 20.7
751	944	683	— 9.1	Indianapolis	4890	4819	4931	+ 0.8
657	848	788	+ 19.9	Kansas City	4538	4400	4734	+ 4.3
209	169	302	+ 44.5	Los Angeles	1100	1140	1236	+ 12.4
595	817	512	— 14.0	Louisville	4027	3898	4072	+ 1.1
969	1085	1029	+ 6.1	Milwaukee	5994	6031	6319	+ 5.4
1082	1122	1168	+ 7.9	Minneapolis	7063	6844	7326	+ 3.7
130	249	110	— 15.3	New Orleans	1175	1350	1594	+ 36.0
785	851	714	— 9.1	New York	4627	4164	4709	+ 1.8
813	952	1023	+ 25.8	Omaha	5508	5433	5831	+ 5.9
685	808	638	— 6.9	Philadelphia	4227	4174	4409	+ 4.3
767	931	659	— 14.1	Pittsburgh	4809	4727	4952	+ 3.0
1003	1010	1060	+ 5.6	Portland, Me.	6085	5992	6498	+ 6.7
530	402	585	+ 10.4	Portland, Ore.	3603	3761	3489	— 3.2
866	822	793	— 8.4	Providence	5158	4583	5679	+ 10.1
616	862	688	+ 11.6	St. Louis	4209	4248	4483	+ 6.5
709	594	878	+ 23.8	Salt Lake City	4885	5094	5127	+ 5.0
314	278	412	+ 31.2	San Francisco	2048	2516	2230	+ 8.8
1303	1286	1336	+ 2.5	Sault Ste. Marie	7587	7313	7623	+ 0.5
595	462	628	+ 5.6	Seattle	3816	3923	3855	+ 1.0
889	1021	900	+ 1.2	Toledo	5442	5297	5786	+ 6.3
637	769	522	— 18.1	Washington	4133	3660	4016	— 2.9

*Compared with normal.